ORDER NO. KM40009698C3

Service Manual

Telephone Equipment

Caller ID Compatible

KX-TC1175BXB / KX-TC1175BXN

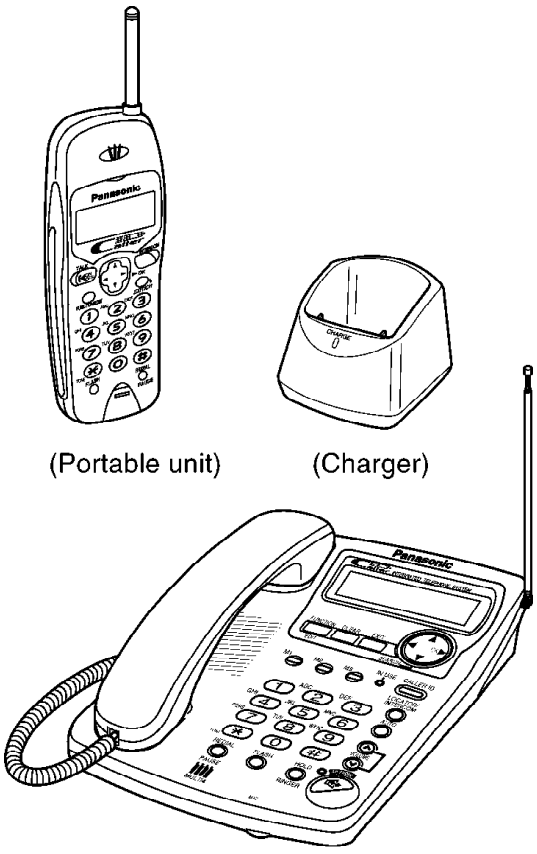
Cordless Phone

Black Version

Champagne Gold Version

(for Asia, Middle Near East and Other areas)

Note: For KX-TCA391BXB (Additional Portable Unit), KX-TCA391BXN, refer to this service manual



(Portable unit) (Charger)

(Base unit)

SPECIFICATIONS

■ SPECIFICATIONS

General

Modulation:	FM, 3 kHz Deviation	Redial:	Last dialed number each time the Redial button is pressed
Frequency Stability:	±2.5 kHz		
Dial Type:	Tone (DTMF)/Pulse	Memory Capacity:	10 telephone numbers, up to 22 digits per station
Pause:	3.5 seconds per pause		

	Base Unit	Portable Unit	Charger
Power Source:	AC adaptor KX-TCA1BX (DC 9 V)	Built-in rechargeable Ni-Cd battery	AC adaptor KX-TCA1BX (DC 9 V)
(Receiver Section)			
Receiving Frequency:	10 channels within 49.67 to 49.99 MHz	10 channels within 43.72 to 44.20 MHz	
Adjacent Channel Rejection:	40 dB	40 dB	
Sensitivity:	1 μV for 20 dB S/N	2 μV for 20 dB S/N	
(Transmitter Section)			
Transmitting Frequency:	10 channels within 43.72 to 44.20 MHz	10 channels within 49.67 to 49.99 MHz	
Jacks:	DC IN, Telephone line		DC IN
Antenna:	Telescopic	Telescopic	
Speaker:	57mm PM dynamic	3 cm dynamic	
Microphone:	Condenser microphone	Condenser microphone	
Dimensions (H × W × D):	$3^{3}/_{32}$" × $6^{21}/_{32}$" × $8^{3}/_{4}$" (79 × 169 × 222 mm) with handset	$8^{7}/_{8}$" × $2^{9}/_{16}$" × $1^{15}/_{32}$" (225 × 56 × 37 mm)	$2^{3}/_{4}$" × $3^{7}/_{32}$" × $3^{11}/_{32}$" (70 × 82 × 85 mm)
Weight:	1.65lbs. (750g) with handset	0.44lbs. (200g) with battery	0.20lbs. (90g)

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt tp service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

When you mention the serial number, write down all 11 digits. The serial number may be found on the label affixed to the bottom of the unit.

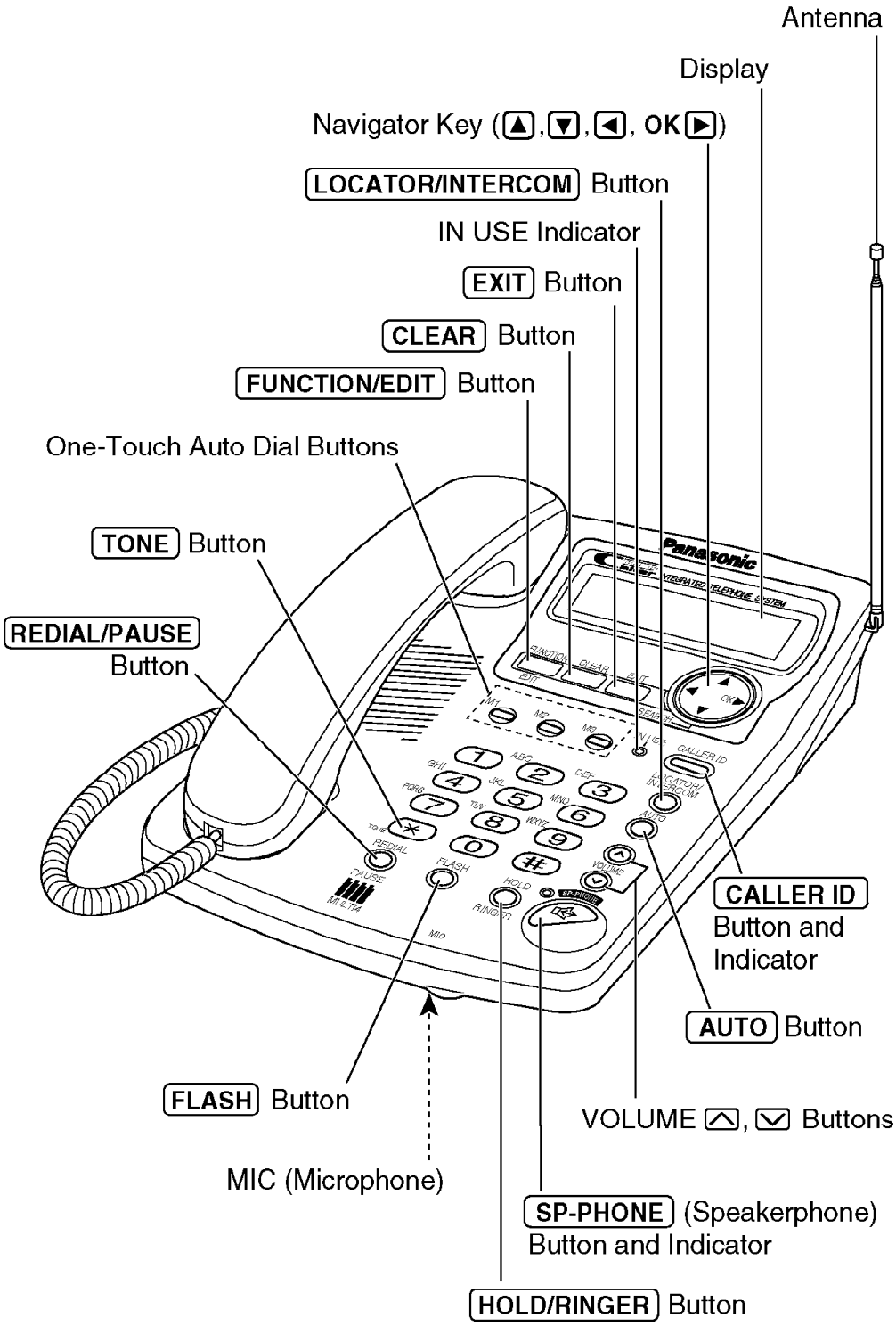
FOR SERVICE TECHNICIANS

ICs and LSIs are vulnerable to static electricity.
When repairing, the following precautions will help prevent recurring malfunctions.
1. Cover plastic parts boxes with aluminum foil.
2. Ground the soldering irons.
3. Use a conductive mat on worktable.
4. Do not grasp IC or LSI pins with bare fingers.

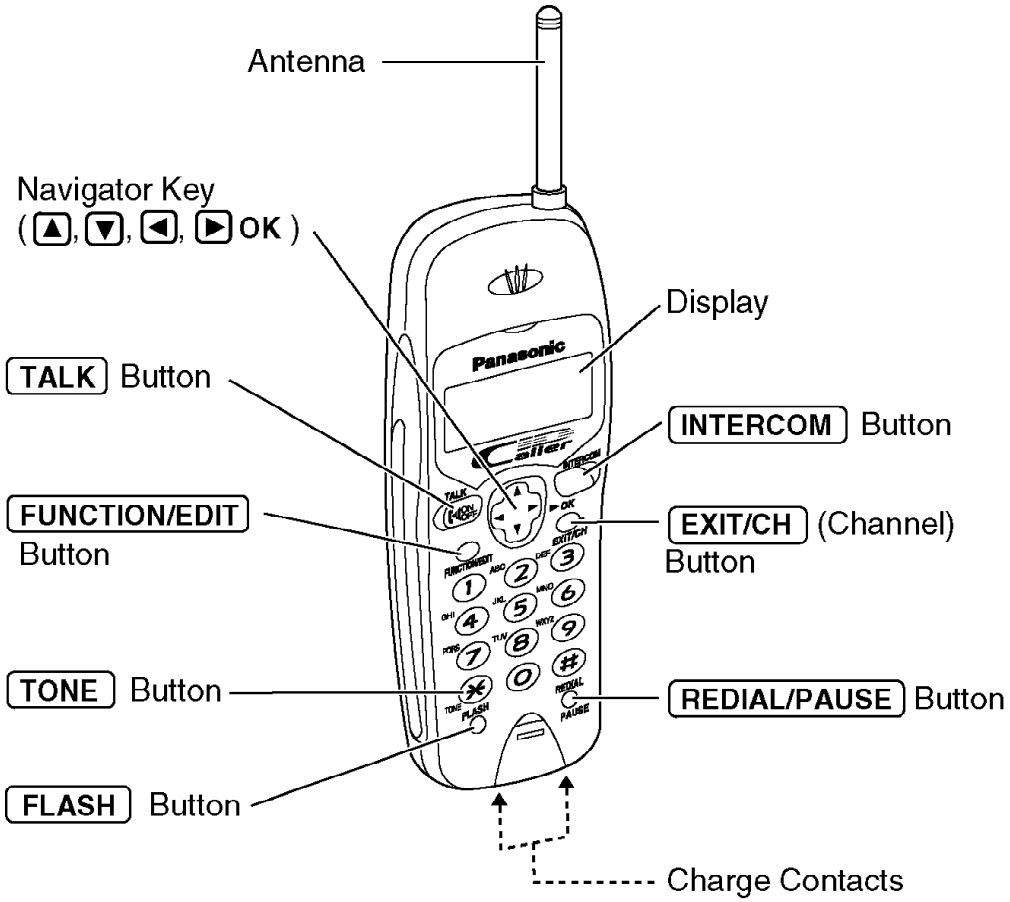
Panasonic

1. LOCATION OF CONTROLS

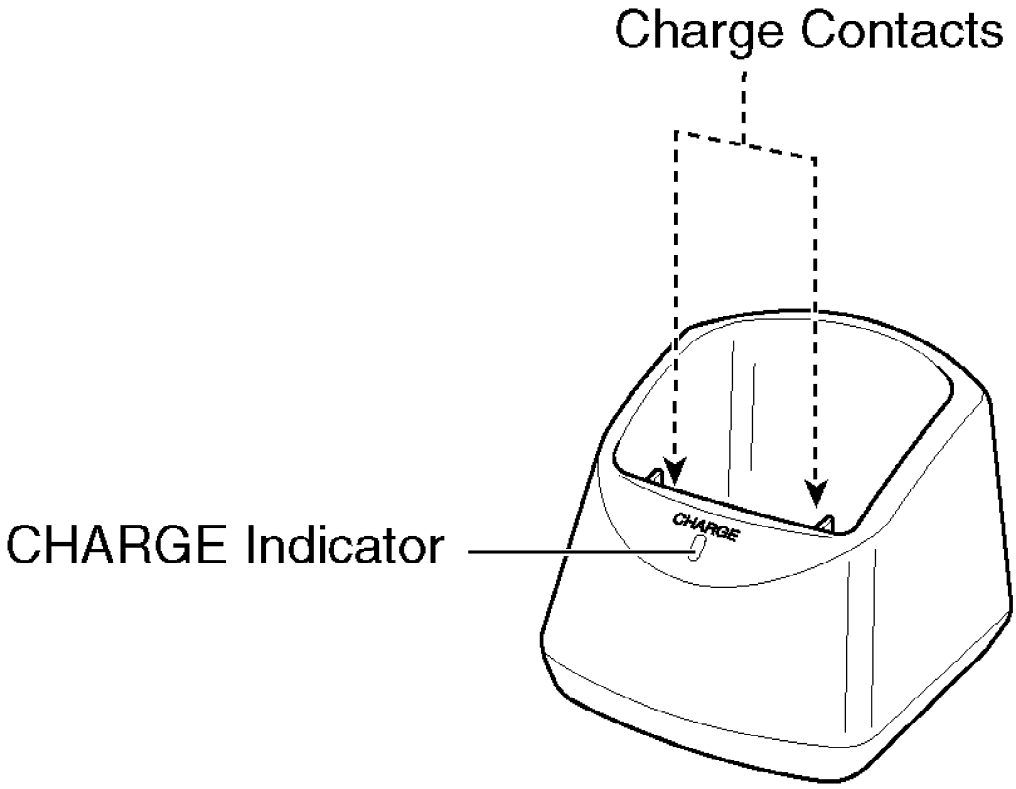
1.1. Base Unit



1.2. Portable Unit

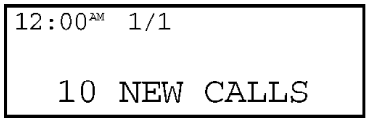

Antenna
Navigator Key
(▲, ▼, ◀, ▶ OK)
Display
TALK Button
INTERCOM Button
FUNCTION/EDIT
Button
EXIT/CH (Channel)
Button
TONE Button
REDIAL/PAUSE Button
FLASH Button
Charge Contacts

1.3. Charger

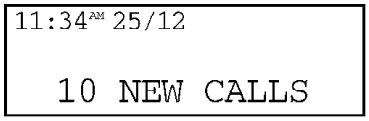

Charge Contacts
CHARGE Indicator
CHARGE

1.4. Display

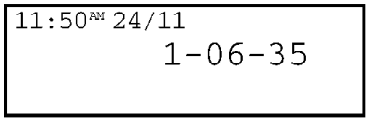
1.4.1. Base Unit Display



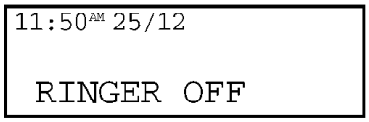
If the display continuously shows "12:00AM 1/1" or "0:00 1/1", the clock needs adjusting.



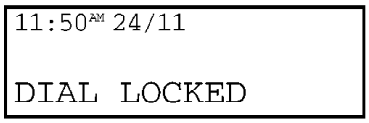
In the standby mode, the display shows the current time and date, and the number of new calls.



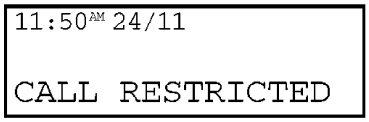
During a conversation, the display shows the length of the call. (Ex. 1 hour, 6 minutes and 35 seconds.)



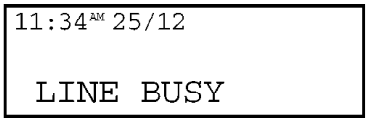
The base unit ringer volume is off.



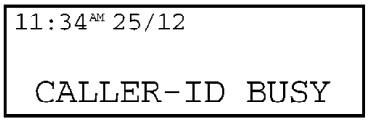
The dial lock mode is set.



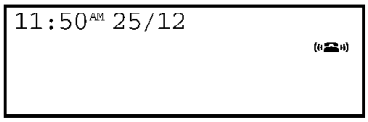
When the restricted number (0 or 00) is dialed, it is displayed.



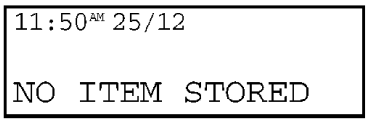
While the portable unit is engaged in an outside call, it is displayed.



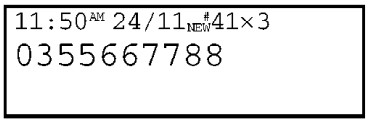
While the portable unit user is using the Caller List, it is displayed.



The alarm clock is turned on.

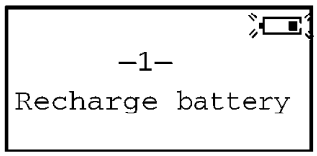


The Caller List is empty.



This is a display from the Caller List.
The display shows:
— the time and date of the last call (Ex. Nov. 24, 11:50 AM),
— the number of the call in the Caller List (Ex. #41),
— the caller information is new and has not been viewed ("NEW" is displayed),
— the number of times called (Ex. 3 times) and
— the caller's phone number.

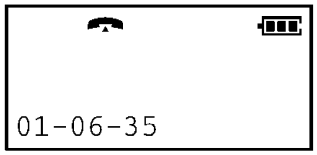
1.4.2. Portable Unit Display



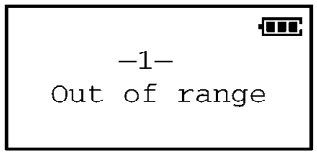
The battery needs to be charged. Place the portable unit on the charger to charge the battery.

The display will show the number of new calls when ◀ or ▶ **OK** is pressed.

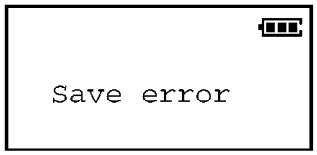
To search from the most recent call, press ▼ (New key). To search from the oldest call, press ▲ (Old key)



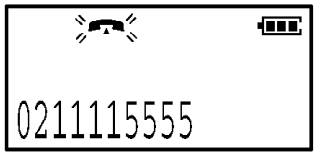
During a conversation, the display shows the length of the call (Ex. 1 hour, 6 minutes and 35 seconds). The battery strength is also displayed.



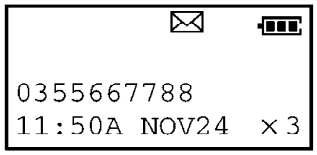
This display will be shown when:
—the portable unit has lost communication with the base unit. Move closer to the base unit, or
—another portable unit is in use.



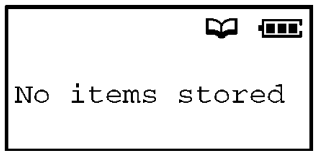
While programming, the portable unit lost communication with the base unit. Move closer to the base unit.



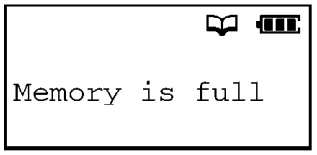
When a call is received, the display shows the caller's phone number after the first ring.



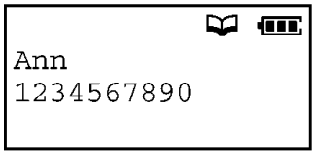
This is an information from the Caller List.
The display shows:
—the caller's phone number,
—the time and date of the last call (Ex. Nov. 24, 11:50 AM), and
—the number of times called (Ex. 3 times).



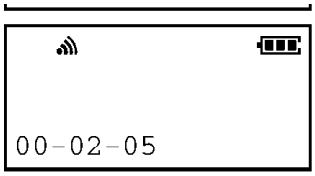
This display will be shown when:
—the Caller List is empty,
—the directory list is empty, or
—there are no stored items in the dialing button you pressed in the directory.



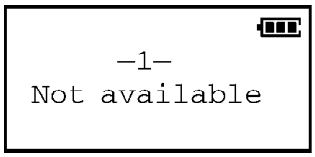
When trying to store an item or Caller List information in the directory, the directory memory is full.



This is a name from the directory. The stored name and phone number are displayed.



The length of the intercom call between the portable unit and base unit is displayed (Ex. 2 minutes 5 seconds).



TALK was pressed while the base unit was in use.

2. STANDARD BATTERY LIFE

After your Panasonic battery is fully charged;

While in use (TALK)	**Up to about 6 hours**
While not in use (Stand-by)	**Up to about 20 days**

- Battery life may be shortened depending on usage conditions, such as viewing the Caller ID Caller List or directory items and ambient temperature.

- Clean the charge contacts of the portable unit and the charger with a soft, dry cloth. Clean if the unit is subject to grease, dust or high humidity. Otherwise the battery may not charge properly.

- If the battery is fully charged, you do not have to place the portable unit on the charger until "Recharge battery" is displayed and/or "▭" flashes. This will maximize the battery life.

- The battery cannot be overcharged.

Portable unit standby mode
(The portable unit is off the charger.)
The portable unit goes into the standby mode after you finish using the portable unit (making/ answering a call, viewing the Caller List or directory items etc.). The display is blank, but the portable unit can receive calls. The battery life is conserved in this mode.

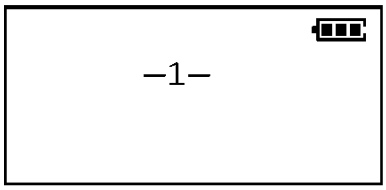
2.1. Battery Charge

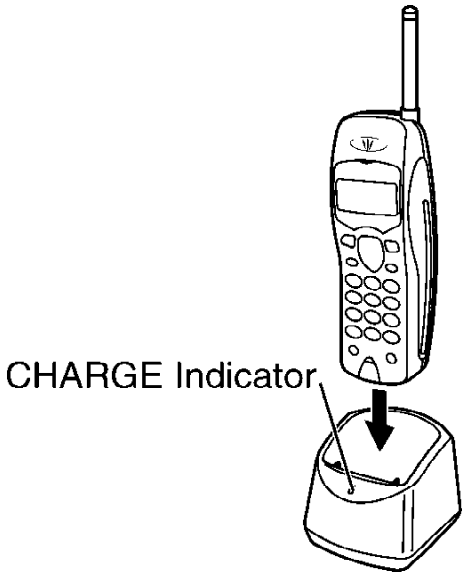
Place the portable unit on the charger and charge for about 10 hours before initial use.

- Make sure that the confirmation tone sounds when the portable unit is placed on the charger.

- The CHARGE indicator lights.

- The portable unit number is displayed.





Battery Strength

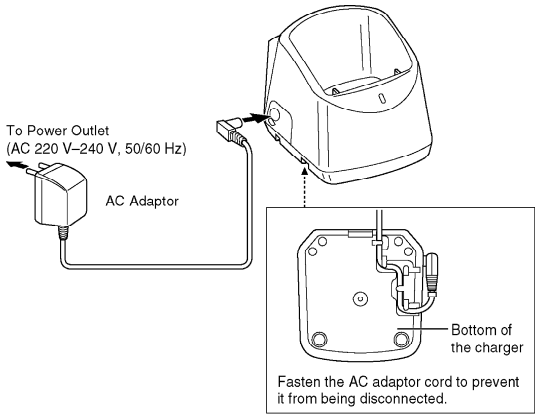
You can check the preset battery strength on the display. The battery strength is as shown in the chart below.

Display prompt	Battery strength
	Fully charged
	Medium
	Low
(flashing)	Needs to be recharged.

3. SETTINGS

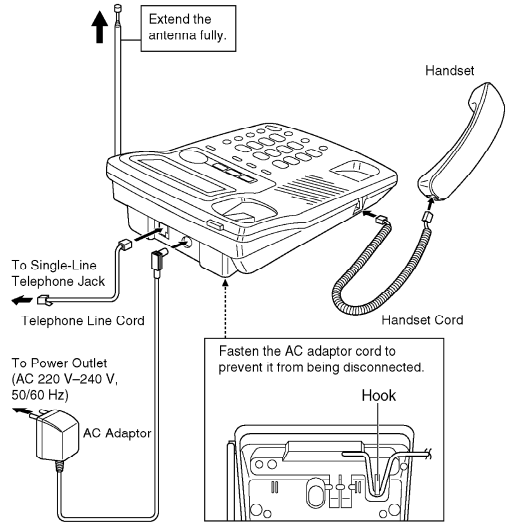
3.1. Connections

Charger



- USE ONLY WITH Panasonic AC ADAPTOR KX-TCA1BX.
- The AC adaptor must remain connected at all times. (It is normal for the adaptor to feel warm during use.)

Base Unit



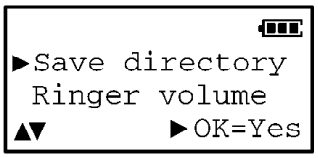
- USE ONLY WITH Panasonic AC ADAPTOR KX-TCA1BX. The AC adaptor must remain connected at all times. (It is normal for the adaptor to feel warm during use.)
- Use only a Panasonic Handset for the KX-TC1175BXB/KX-TC1175BXN.
- During a power failure, this unit functions only as a regular telephone.
- If your unit is connected to a PBX which does not support Caller ID services, you cannot access those services.
- When more than one unit is used, the units may interfere with each other. To prevent or reduce interference, please leave ample

space between the base units.

3.1.1. Selecting the Dialing Mode (Portable Unit)

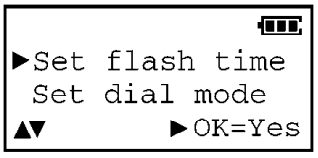
You can program the dialing mode **using the portable unit near the base unit**. If you have touch tone service, set to "Tone". If rotary or pulse service is used, set to "Pulse". Your phone comes from the factory set to "Tone". **Make sure that the base unit and portable unit are in the standby mode.**

1 Press **FUNCTION/EDIT** on the portable unit.

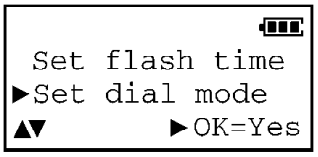


2 Press ▼ or ▲ repeatedly until the arrow points to "Program".

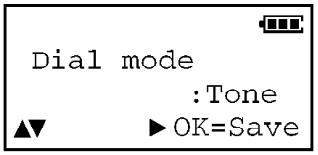
3 Press ▶ **OK** (Yes key).



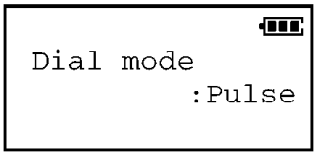
4 Press ▼ or ▲ repeatedly until the arrow points to "Set dial mode".



5 Press ▶ **OK** (Yes key).



6 Press ▼ or ▲ to select "Pulse" or "Tone". Press ▶ **OK** (Save key).



- A beep sounds.
- To return to the standby mode, press **EXIT/CH**.

- You can exit the programming mode any time by pressing **EXIT/CH**.
- If 3 beeps sound and the display shows "Save error", move closer to the base unit and try again. If "Save error" is still displayed, place the portable unit on the charger. Start again from step 1.

3.1.2. FLASH Button (Portable Unit) (Base Unit)

Pressing **FLASH** allows you to use special features of your host PBX such as transferring an extension call or accessing special telephone services (optional) such as call waiting.

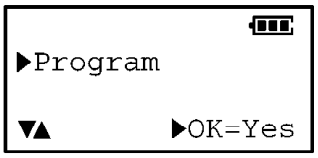
Selecting the flash time (Portable Unit)

The flash time depends on your telephone exchange or host PBX.
You can select from flash times: "700, 600, 400, 300, 250, 110, 100 or 90 ms (milliseconds)" **using the portable unit near the base unit**. Your phone comes from the factory set to "700 ms".

Make sure that the base unit and portable unit are in the standby mode.

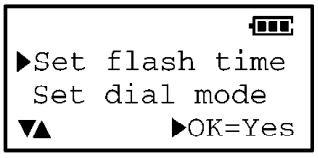
1 Press **FUNCTION/EDIT** on the portable unit.

2 Press ▼ or ▲ repeatedly until the arrow points to "Program".



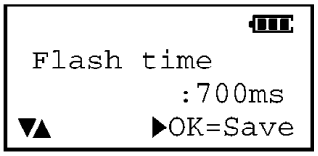
3 Press ▶ **OK** (Yes key).

4 Press ▼ or ▲ repeatedly until the arrow points to "Set flash time".



5 Press ▶ **OK** (Yes key).

6 Press ▼ or ▲ repeatedly until the desired time is displayed.



7 Press ▶ **OK** (Save key).

- A beep sounds.
- To return to the standby mode, press **EXIT/CH**.

- You can exit the programming mode any time by pressing **EXIT/CH**.
- If 3 beeps sound and the display shows "Save error", move closer to the base unit and try again. If "Save error" is still displayed, place the portable unit on the charger. Start again from step 1.
- If you are connected via a PBX, a longer flash time may be necessary to use PBX functions (transferring a call etc.). Consult your PBX installer for the correct setting.

3.1.3. Dial Lock (Base Unit)

You can prevent the portable unit and base unit from making a call to any number except the one pre-programmed in the memory of one-touch auto dial buttons. Once you locked the dialing buttons, even emergency numbers cannot be dialed. Only incoming calls are accepted until the dial lock is canceled.

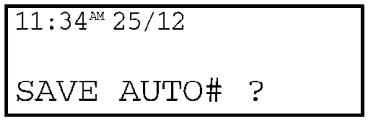
Before using this feature, we recommend storing emergency numbers in the memory of one-touch auto dial buttons. Even if the dialing buttons are locked, the numbers stored in these buttons can be dialed.

- If you choose not to program emergency numbers, but plan to use the dial lock, any numbers programmed into the One-Touch Dialer can be accessed.

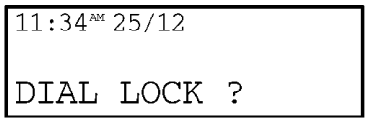
Setting the dial lock

Make sure that the base unit and portable unit are in the standby mode.

1 Press **FUNCTION/EDIT** on the base unit.

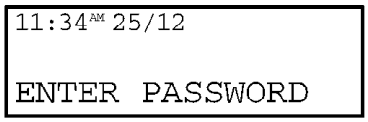


2 Press ▼ or ▲ repeatedly until "DIAL LOCK ?" is displayed.



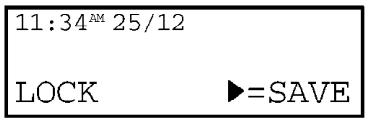
3 Press **OK** ▶.

- If you use "1111" as a password (factory set), there is no need to enter the password. Go to step 5.



4 Enter the password, then press **OK** ▶.

- If the wrong password is entered, 6 beeps will sound. Enter the correct password, then press **OK** ▶.



5 Press ▼ or ▲ to select "LOCK".

6 Press **OK** ▶ (SAVE key).

- A beep sounds.
- To return to the standby mode, press **EXIT**.

If the dial buttons on the base unit are pressed, "DIAL LOCKED" will be displayed.

You can use the following features while the dialing buttons are locked.

- Dialing a number you programmed into the memory of one-touch auto dial buttons.
- Storing names and numbers in memory

- Storing names and numbers in memory.
- Selecting the ringer volume.
- Answering the second call by pressing **FLASH**.

Canceling the dial lock

Follow steps 1 through 4. In step 5, select `"UNLOCK"`.

3.1.4. Call Restriction (Base Unit)

You can prevent the portable unit and base unit from dialing phone numbers beginning with "0" or "00". Phone numbers with the restricted leading digits cannot be dialed out. Phone numbers stored in the One-Touch Dialing are not affected by the call restriction setting.

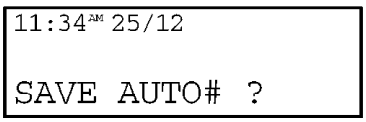
Before using this feature, we recommend storing emergency numbers in the memory of one-touch auto dial buttons. Even if the phone numbers buttons are restricted, the numbers stored in these buttons can be dialed.

- If you choose not to program emergency numbers, but plan to use the call restriction, any numbers programmed into the One-Touch Dialer can be accessed.

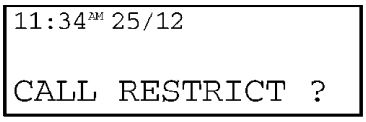
Setting the call restriction

Make sure that the base unit and portable unit are in the standby mode.

1 Press **FUNCTION/EDIT** on the base unit.

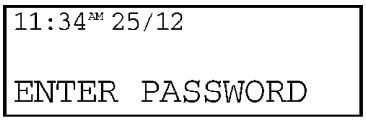


2 Press ▼ or ▲ repeatedly until "CALL RESTRICT ?" is displayed.



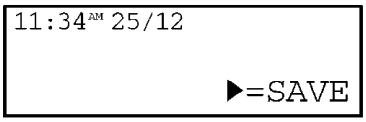
3 Press **OK** ▶.

- If you use "1111" as a password (factory set), there is no need to enter the password. Go to step 5.



4 Enter the password, then press **OK** ▶.

- If the wrong password is entered, 6 beeps will sound. Enter the correct password, then press **OK** ▶.
- The current restricted number is displayed.



5 Press **0** to select the restricted no. ("0" or "00").
(Ex. "0" is selected.)

- Each time you press **0**, the restricted no. will change.

6 Press **OK** ▶ (SAVE key).

- A beep sounds.
- To return to the standby mode, press

• To return to the standby mode, press EXIT.

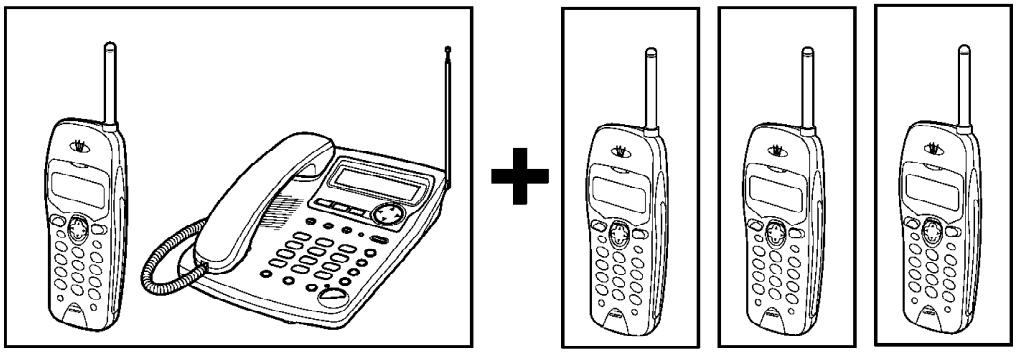
When dialing a phone number beginning with the restricted no., "CALL RESTRICTED" is displayed on the base unit and not dialed out.

Canceling the call restriction

Follow steps 1 through 4. In step 5, press CLEAR.

3.2. For Optional Multi-Portable Unit Users

You can register and operate up to 4 portable units at the base unit.



KX-TC1175BXB/KX-TC1175BXN **Optional Multi-Portable Units**

Important:

The functions of the optional portable unit are the same as the original portable unit.
The optional portable unit model number is:

Model No.	KX-TC1175BXB/KX-TC1175BXN
Optional Portable Unit Model No.	KX-TCA391BXB KX-TCA391BXN

When using two or more portable units, the following operation's features will be different.
—Intercom between the portable unit and base unit
—Transferring outside calls

- All of the portable units ring when calls are received.
- When one of the portable units is in use or in the intercom mode, other portable units can not be used.
- An intercom between two portable units is not available.

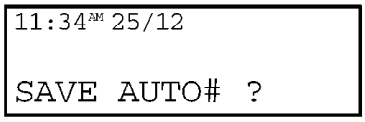
3.2.1. Registering Optional Portable Units (Base Unit & Portable Unit)

Registration is necessary for portable units. You can register up to 4 portable units at the base unit. The model number of the optional portable unit is KX-TCA391BXB/KX-TCA391BXN. The included portable unit is pre-registered at the factory and assigned the portable unit number 1.
A portable unit will be assigned the number at registration. Only one portable unit can be registered at a time.

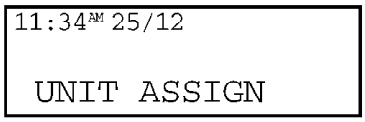
> You can not assign the same number to more than one portable unit. To confirm the portable unit number, place the portable unit on the charger.

Make sure that the portable unit and base unit are in the standby mode. Registration must be completed within 1 minute.

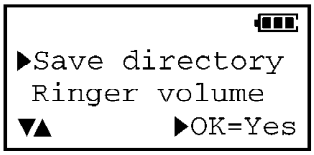
1 **Base unit:**
Press **FUNCTION/EDIT** until 2 beeps sound.



2 Press ✳.
• The IN USE indicator flashes.

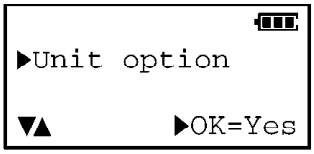


3 **Portable unit:**
Press **FUNCTION/EDIT**.



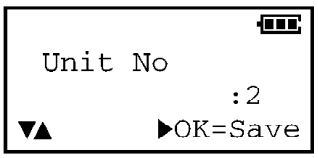
4 Press ▼ or ▲ repeatedly until the arrow points to "Program", then press ▶ **OK** (Yes key).

5 Press ▼ or ▲ repeatedly until the arrow points to "Unit option", then press ▶ **OK** (Yes key).



6 While "Assign" is at the arrow, press ▶ **OK** (Yes key).

7 Press ▼ or ▲ repeatedly until the desired portable unit number (1 to 4) is displayed.
(Ex. "2" is selected.)

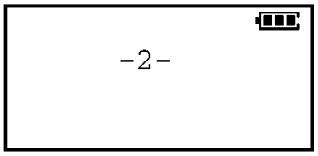


- The selected number is displayed.

8 Press ▶ **OK** (Save key).

- A beep sounds on the base unit and portable unit.
- The IN USE indicator on the base unit goes out.

9 Press **EXIT/CH** to return to the standby mode.



- The portable unit number (1 to 4) will be displayed on the portable unit.

- You can exit the programming mode any time by pressing **EXIT/CH**.
- If 3 beeps sound and the display shows "Save error", place the portable unit on the charger. Start again from step 1.
- When you want to change the portable unit number, erase the previous number. Then restart from step 1.

To erase the portable unit number

1. Press **FUNCTION/EDIT** on the portable unit.
2. Press ▼ or ▲ repeatedly until the arrow points to "Program", then press ▶ **OK** (Yes key).
3. Press ▼ or ▲ repeatedly until the arrow points to "Unit option", then press ▶ **OK** (Yes key).
4. Press ▼ or ▲ repeatedly until the arrow points to "Erase", then press ▶ **OK** (Yes key).
   - The selected number is displayed.
5. Press ▶ **OK** (Yes key).
   - A beep sounds.
   - To return to the standby mode, press **EXIT/CH**.

- You can exit the programming mode any time by pressing **EXIT/CH**.

4. EXPLANATION OF ID CODE

4.1. General Information

The ID CODE for KX-TC1175BXB/KX-TC1175BXN consists of 5-digit numbers between "00000"~"65535". They are stored into the base unit and the portable unit. The ID CODE is found in the label on the bottom of each cabinet of the base unit and the portable unit. As for a newly installed extension portable unit, the ID CODE of the base unit is written into the portable unit. Refer to registered the portable unit described in 3.2.1 Registering Optional Portable Units (Base Unit & Portable Unit).

4.2. ID Writing (For service activity)

The explanation of the method of writing this ID is used to write ID besides ID of the set when the person in charge of service repairs the set.

<Writing Procedure>

1. **Install the option diode DS13 to the base unit and turn the power ON.**

   - The base unit enters the RX waiting mode at the special channel (As for the special channel, refer to 12 FREQUENCY TABLE (MHz).)

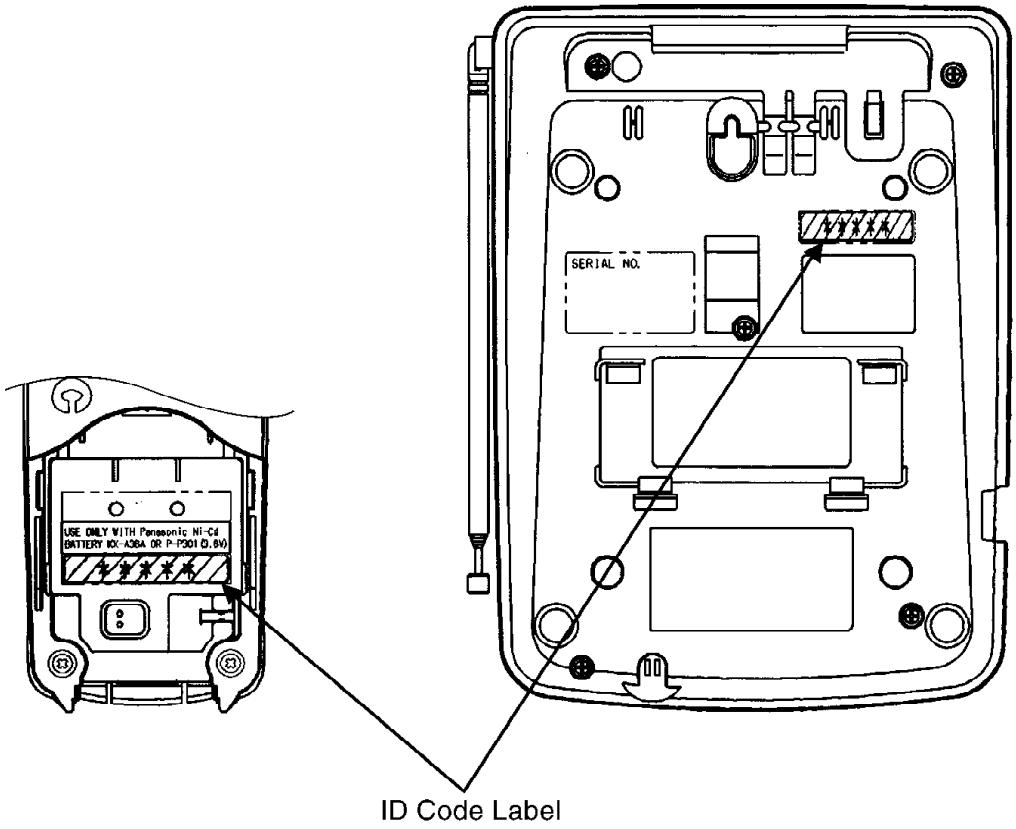
2. **Insert the battery into the portable unit while pressing the keys of 2,7 and # at the same time. "ID code write" is displayed on the LCD of the portable unit.**
3. **Press the TALK button of the portable unit. The portable unit and the base unit are linked at the special channel. (As for the special channel, refer to 12 FREQUENCY TABLE (MHz))**
4. **Press the ID CODE of 5 digits using the decimal system from the portable unit according to ID of the ID label. 00000~65535**
5. **Press the TALK button of the portable unit.**

   - The portable unit transmits the ID writing request data.
   - When the base unit receives the data, a new ID is written in the EEPROM of the base, then it transmits "ID confirmation data" to the portable unit.
   - When the portable unit receives the data, the ID is written in the EEPROM of the portable unit, then the confirmation tone will sound.

Note: When ID writing is failed, the error sound will be output. At

the same time, RF block and EEPROM of the base unit and the portable unit should be checked.

6. **Turn OFF the power of the base unit, and then remove the option diode DS13. Charge the portable unit.**
7. **Turn ON the power of the base unit then confirm the LINK.**



5. DISASSEMBLY INSTRUCTIONS

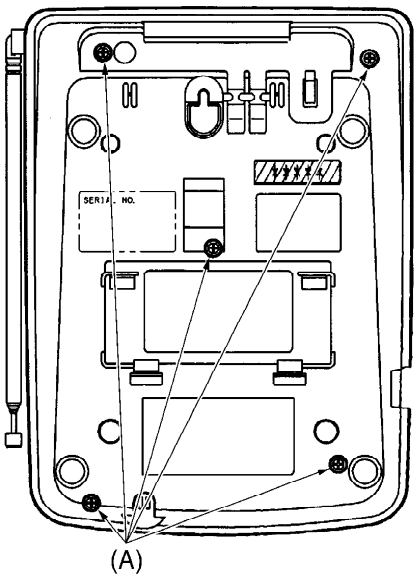


Fig.1

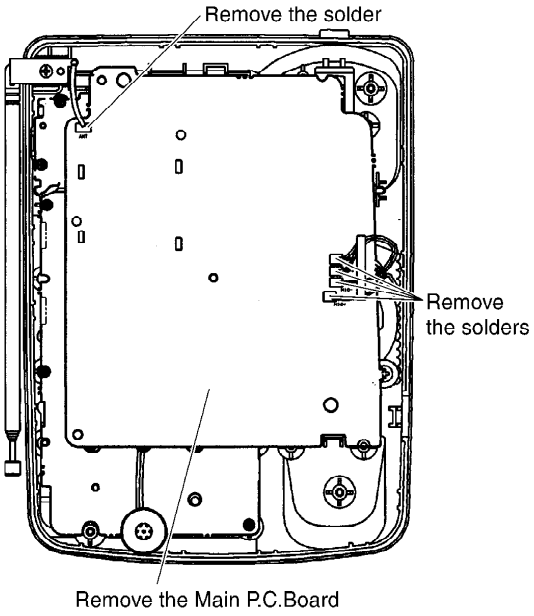


Fig.2

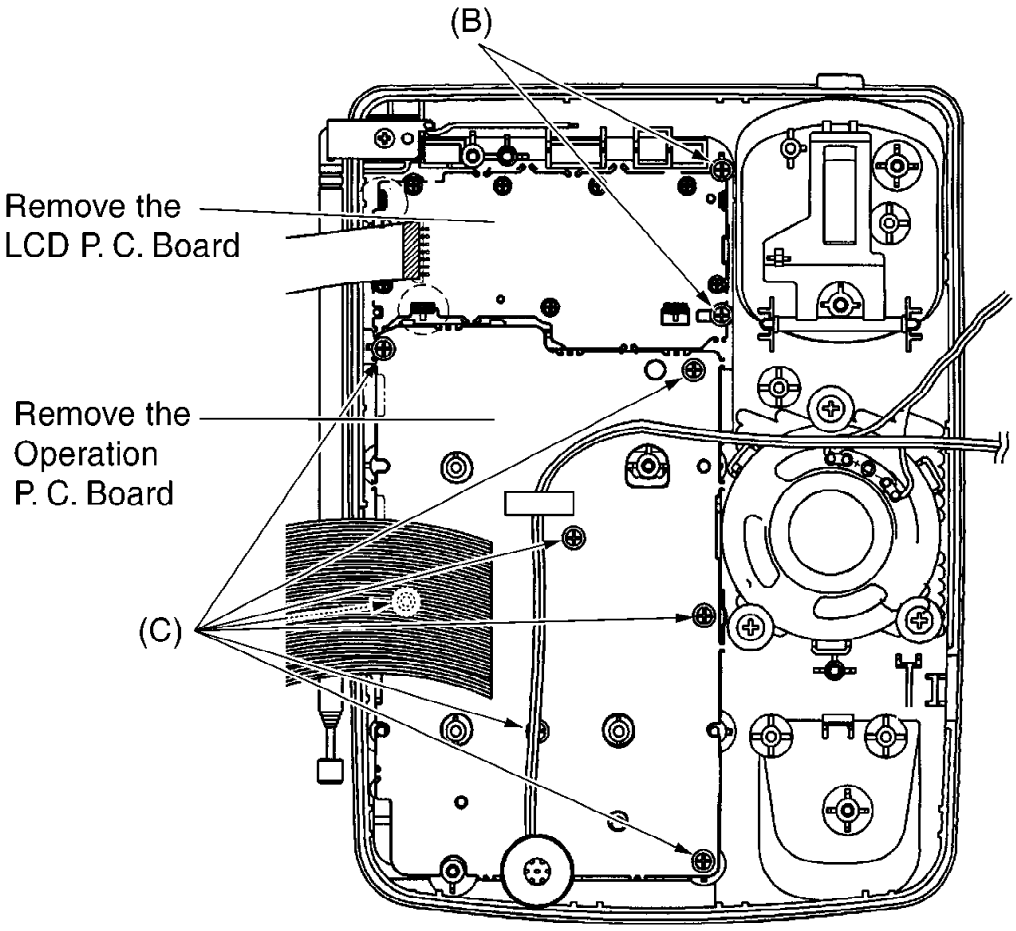


Fig.3

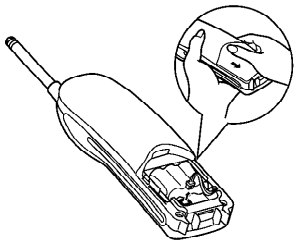


Fig.4

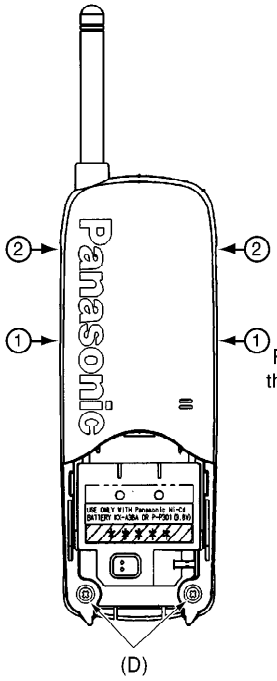


Fig.5

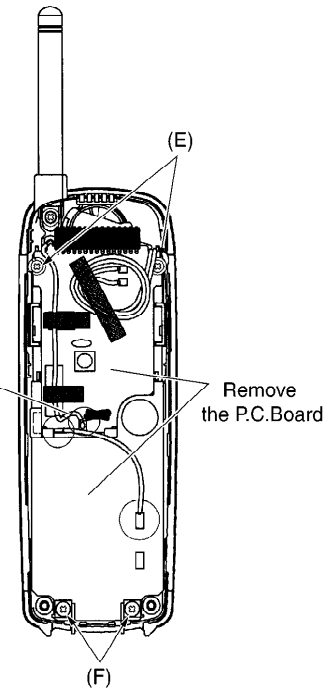


Fig.6

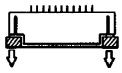
Ref. No.	Procedure	Shown in Fig. -	To remove-.	Remove-.
1	1	1	Lower Cabinet	Screws (2.6× 14).....(A)×5
2	1, 2	2	Main P.C. Board	Remove the solders
				Remove the Main P.C.Board
3	1, 2, 3	3	LCD P.C. Board	Screws (2.6× 8).....(B)×2
				Remove the LCD P.C.Board
			Operation P.C. Board	Screws (2.6× 8).....(C)×7
				Remove the Operation P.C.Boar
4	4	4	Rear Cabinet	Remove the battery compartmer cover
5	4, 5	5		Screws (2.6× 12).....(D)×2
6	4, 5, 6	6	Main P.C. Board	Screws (2.6× 12).....(E)×2
				Remove the solders
	4, 5, 6,			Screws (2.6× 10).....(F)×2
				Remove the Main P.C.Board

Note: Press ① and ② firmly to open the cabinet.

6. ASSEMBLY INSTRUCTION

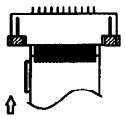
①

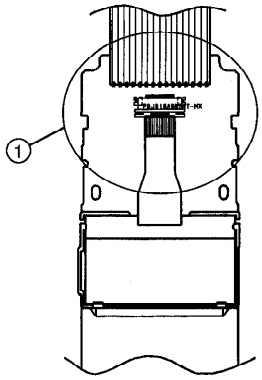
1 RELEASE THE LOCK OF THE CONNECTOR.

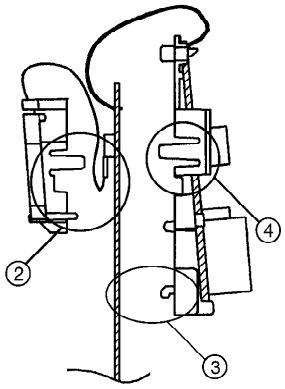


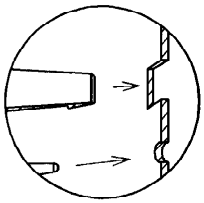
2 INSERT THE EDGE OF FPC (Flexible Print Circuit) DEEPLY INTO THE CONNECTOR.

3 PUSH HATCHED PARTS SIMULTANEOUSLY





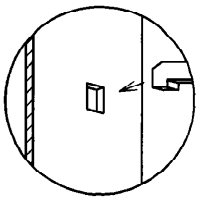


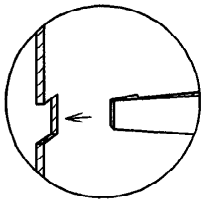


② HOOKS OF LCD HOLDER SHOULD BE FIXED FIRMLY ON P.C.B.

INSERT GUIDE RIB FOR LCD HOLDER CORRECTLY INTO P.C.B. SLIT.

③ INSERT GUIDE RIB FOR LCD HOLDER CORRECTLY INTO P.C.B. HOLE.





④ HOOKS OF RF HOLDER SHOULD BE FIXED FIRMLY ON P.C.B.

7. HOW TO REPLACE FLAT PACKAGE IC

7.1. Preparation

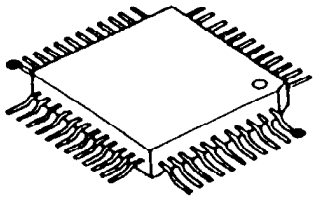
- SOLDER / Sparkle Solder 115A-1, 115B-1 or Almit Solder KR-19, KR -19RMA

- Soldering iron / Recommended power consumption will be between 30 W to 40 W. / Temperature of Copper Rod 662 ±50°F (350 ±10°C) / (An expert may handle between 60 ~ 80 W iron, but beginner might damage foil by overheating.)

- Flux / HI115 Specific gravity 0.863 / (Original flux will be replaced daily.)

7.2. Procedure

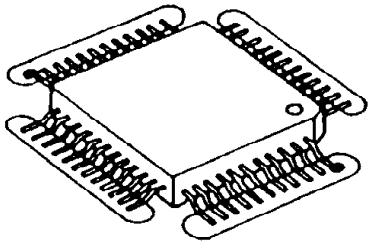
1. Temporary fix FLAT PACKAGE IC by soldering on two marked 2 pins.



●– – – – – –Temporary soldering point.

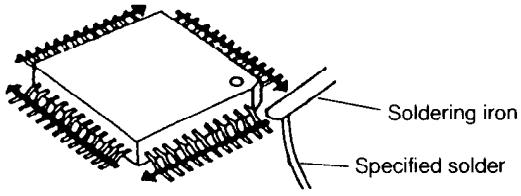
Most important matter is accurate setting of IC to the corresponding soldering foil.

2. Apply flux for all pins of FLAT PACKAGE IC.



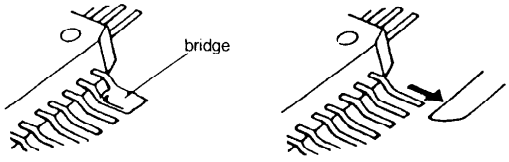
– – – – – – Flux

3. Solder employing specified solder to direction of arrow, as sliding the soldering iron.



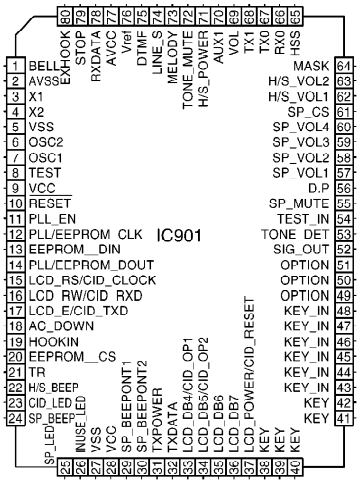
7.3. Modification Procedure of Bridge

1. Re-solder slightly on bridged portion.
2. Remove remained solder along pins employing soldering iron as shown in below figure.



8. CPU DATA (BASE UNIT)

8.1. IC901

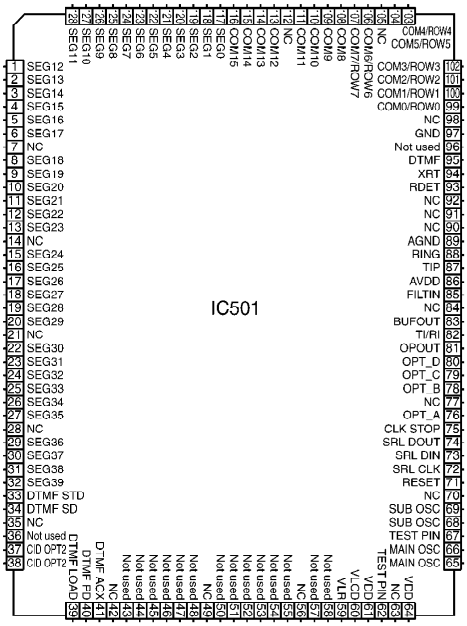


Pin	Description	I/O	High	High-Z	Low
1	BELL	I	None	-	BELL
2	AVSS	-	-	-	-
3	X1	O	-	-	-
4	X2	I	-	-	-
5	VSS	-	-	-	-
6	OSC2	-	-	-	-
7	OSC1	-	-	-	-
8	TEST	-	-	-	-
9	VCC	-	-	-	-
10	RESET	-	Normal	-	Reset
11	PLL_EN	O	Latch	-	Normal
12	PLL/EEPROM_CLK	O	(Clock)	-	Normal
13	EEPROM_DIN	I	(data)	-	(data)
14	PLL/EEPROM_DOUT	O	(data)	-	Normal
15	LCD_RS/CID_CLOCK	O	(Clock)	-	(Clock)
16	LCD_RW/CID_RXD	I	(data)	-	Normal
17	LCD_E/CID_TXD	O	(data)	-	Normal
18	AC_DOWN	I	None	-	AC
19	HOOKIN	I	ON HOOK	-	OFF HOOK
20	EEPROM_CS	O	Select	-	Normal
21	TR	O	OFF HOOK	-	ON HOOK
22	H/S_BEEP	O	OFF	-	ON
23	CID_LED	O	OFF	-	ON
24	SP_BEEP	NCH OD	(beep)	Normal	(beep)
25	SP_LED	O	(beep)	-	Normal
26	INUSE_LED	O	ON	-	OFF
27	VSS	-	-	-	-
28	VCC	-	-	-	-
29	SP_BEEPONT1	NCH OD	-	MIN:L MID:Hi_Z	MAX:Hi_Z
30	SP_BEEPONT2	NCH OD	-	L L	Hi_Z
31	TXPOWER	O	OFF	-	ON
32	TXDATA	O	(data)	-	Normal
33	LCD_DB4/CID_OP1	I	TX MUTE	-	Normal
34	LCD_DB5/CID_OP2	O	BUSY	-	Communication onable
35	LCD_DB6	O	-	-	Fixed
36	LCD_DB7	O	-	-	Fixed
37	LCD_POWER/CID_RESET	O	Reset	-	CID Active
38	KEY	NCH OD	-	Normal	Active
39	KEY	NCH OD	-	Normal	Active
40	KEY	NCH OD	-	Normal	Active

Pin	Description	I/O	High	High-Z	Low
41	KEY	NCH OD	-	Normal	Active
42	KEY	NCH OD	-	Normal	Active
43	KEY_IN	I	None	-	KEY IN
44	KEY_IN	I	None	-	KEY IN
45	KEY_IN	I	None	-	KEY IN
46	KEY_IN	I	None	-	KEY IN
47	KEY_IN	I	None	-	KEY IN
48	KEY_IN	I	None	-	KEY IN
49	OPTION	O	-	Normal	Active
50	OPTION	O	-	Normal	Active
51	OPTION	O	-	Normal	Active
52	SIG_OUT	I	Weak	-	Strong
53	TONE_DET	NCH OD	-	Normal	Mute
54	TEST_IN	I	Normal	-	TEST
55	SP_MUTE	O	Mute	-	Unmute
56	D.P	NCH OD	-	Normal	Break
57	SP_VOL1	NCH OD	-	L:MIN~	Hi_Z:MAX
58	SP_VOL2	NCH OD	-	L	Hi_Z
59	SP_VOL3	NCH OD	-	Hi_Z	Hi_Z
60	SP_VOL4	NCH OD	-	L	Hi_Z
61	SP_CS	O	SP on	-	SP off
62	H/S_VOL1	O	MIN:H	MID:L	MAX:H
63	H/S_VOL2	O	L	H	L
64	MASK	O	MASK	-	Normal
65	HSS	O	*	-	*
66	RX0	O	*	-	*
67	TX0	O	*	-	*
68	TX1	O	*	-	*
69	VOL	NCH OD	VOL up	Normal	VOL down
70	AUX1	O	*	-	*
71	H/S_POWER	O	off	-	on
72	TONE_MUTE	O	Mute	-	Unmute
73	MELODY	O	on	-	off
74	LINE_S	O	on	-	off
75	DTMF	O	Active	Normal	Active
76	Vref	-	-	-	-
77	AVCC	-	-	-	-
78	RXDATA	I	(data)	-	(data)
79	STOP	I	Normal	-	Stop
80	EXHOOK	I	Parallel detection	-	Normal

D.I ---------- Digital Input
D.O --------- Digital Output
A.I ---------- Analog Input
A.O --------- Analog Output
D.I/O ------ Digital Input/Output

8.2. IC501

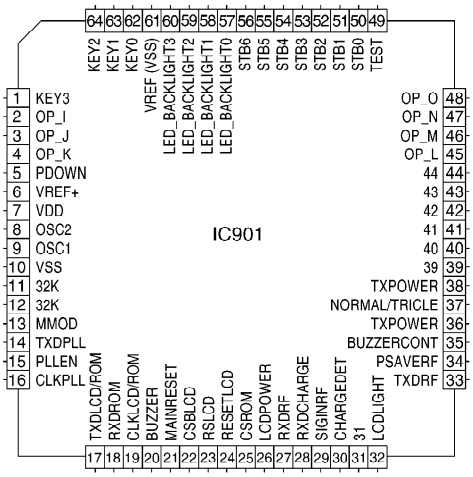


Pin	Description	I/O	High	Hi-z	Low
1	SEG12	O	-	-	-
2	SEG13	O	-	-	-
3	SEG14	O	-	-	-
4	SEG15	O	-	-	-
5	SEG16	O	-	-	-
6	SEG17	O	-	-	-
7	NC	-	-	-	-
8	SEG18	O	-	-	-
9	SEG19	O	-	-	-
10	SEG20	O	-	-	-
11	SEG21	O	-	-	-
12	SEG22	O	-	-	-
13	SEG23	O	-	-	-
14	NC	-	-	-	-
15	SEG24	O	-	-	-
16	SEG25	O	-	-	-
17	SEG26	O	-	-	-
18	SEG27	O	-	-	-
19	SEG28	O	-	-	-
20	SEG29	O	-	-	-
21	NC	-	-	-	-
22	SEG30	O	-	-	-
23	SEG31	O	-	-	-
24	SEG32	O	-	-	-
25	SEG33	O	-	-	-
26	SEG34	O	-	-	-
27	SEG35	O	-	-	-
28	NC	-	-	-	-
29	SEG36	O	-	-	-
30	SEG37	O	-	-	-
31	SEG38	O	-	-	-
32	SEG39	O	-	-	-
33	DTMF STD	I	ON	-	OFF
34	DTMF SD	I	-	-	Normal
35	NC	-	-	-	-
36	Not used	I	-	-	(Fixed)
37	CID OPT2	I	-	-	-
38	CID OPT2	O	-	-	-
39	DTMF LOAD	O	-	-	-
40	DTMF PD	O	Power OFF	-	Power ON
41	DTMF ACX	O	Active	-	Active
42	NC	-	-	-	-
43	Not used	O	-	-	(Fixed)

Pin	Description	I/O	High	Hi-z	Low
44	Not used	O	-	-	(Fixed)
45	Not used	O	-	-	(Fixed)
46	Not used	O	-	-	(Fixed)
47	Not used	O	-	-	(Fixed)
48	Not used	O	-	-	(Fixed)
49	NC	-	-	-	-
50	Not used	O	-	-	(Fixed)
51	Not used	O	-	-	(Fixed)
52	Not used	O	-	-	(Fixed)
53	Not used	O	-	-	(Fixed)
54	Not used	O	-	-	(Fixed)
55	Not used	O	-	-	(Fixed)
56	NC	-	-	-	-
57	Not used	O	-	-	(Fixed)
58	Not used	O	-	-	(Fixed)
59	VLR	O	-	-	-
60	VLCD	I	-	-	-
61	VDD	-	-	-	-
62	TEST PIN	I	-	-	-
63	NC	-	-	-	-
64	VDD	-	-	-	-
65	MAIN OSC	O	-	-	-
66	MAIN OSC	I	-	-	-
67	TEST PIN	I	Normal	-	Test
68	SUB OSC	O	-	-	-
69	SUB OSC	I	-	-	-
70	NC	-	-	-	-
71	RESET	I	Reset	-	Normal
72	SRL CLK	O	Normal	-	Active
73	SRL DIN	I	Data	-	Data
74	SRL DOUT	O	Data	-	Data
75	CLK STOP	O	-	Normal	Stop
76	OPT_A	I	None	-	Option
77	NC	-	-	-	-
78	OPT_B	O	None	-	Option
79	OPT_C	O	None	-	Option
80	OPT_D	I	None	-	Option
81	OPOUT	O	-	-	-
82	TI/RI	I	-	-	-
83	BUFOUT	O	-	-	-
84	NC	-	-	-	-
85	FILTIN	I	-	-	-
86	AVDD	-	-	-	-
87	TIP	I	-	-	-
88	RING	I	-	-	-
89	AGND	-	-	-	-
90	NC	-	-	-	-
91	NC	-	-	-	-
92	NC	-	-	-	-
93	RDET	I	-	-	-
94	XRT	O	-	-	-
95	DTMF	O	-	-	-
96	Not used	I	-	-	-
97	GND	-	-	-	-
98	NC	-	-	-	-
99	COM0/ROW0	-	-	-	-
100	COM1/ROW1	-	-	-	-
101	COM2/ROW2	-	-	-	-
102	COM3/ROW3	-	-	-	-
103	COM4/ROW4	-	-	-	-
104	COM5/ROW5	-	-	-	-
105	NC	-	-	-	-
106	COM6/ROW6	-	-	-	-
107	COM7/ROW7	-	-	-	-
108	COM8	-	-	-	-
109	COM9	-	-	-	-
110	COM10	-	-	-	-
111	COM11	-	-	-	-
112	NC	-	-	-	-
113	COM12	-	-	-	-
114	COM13	-	-	-	-
115	COM14	-	-	-	-
116	COM15	-	-	-	-
117	SEG0	-	-	-	-
118	SEG1	-	-	-	-
119	SEG2	-	-	-	-
120	SEG3	-	-	-	-
121	SEG4	-	-	-	-
122	SEG5	-	-	-	-
123	SEG6	-	-	-	-
124	SEG7	-	-	-	-
125	SEG8	-	-	-	-
126	SEG9	-	-	-	-
127	SEG10	-	-	-	-
128	SEG11	-	-	-	-

9. CPU DATA (PORTABLE UNIT)

9.1. IC901

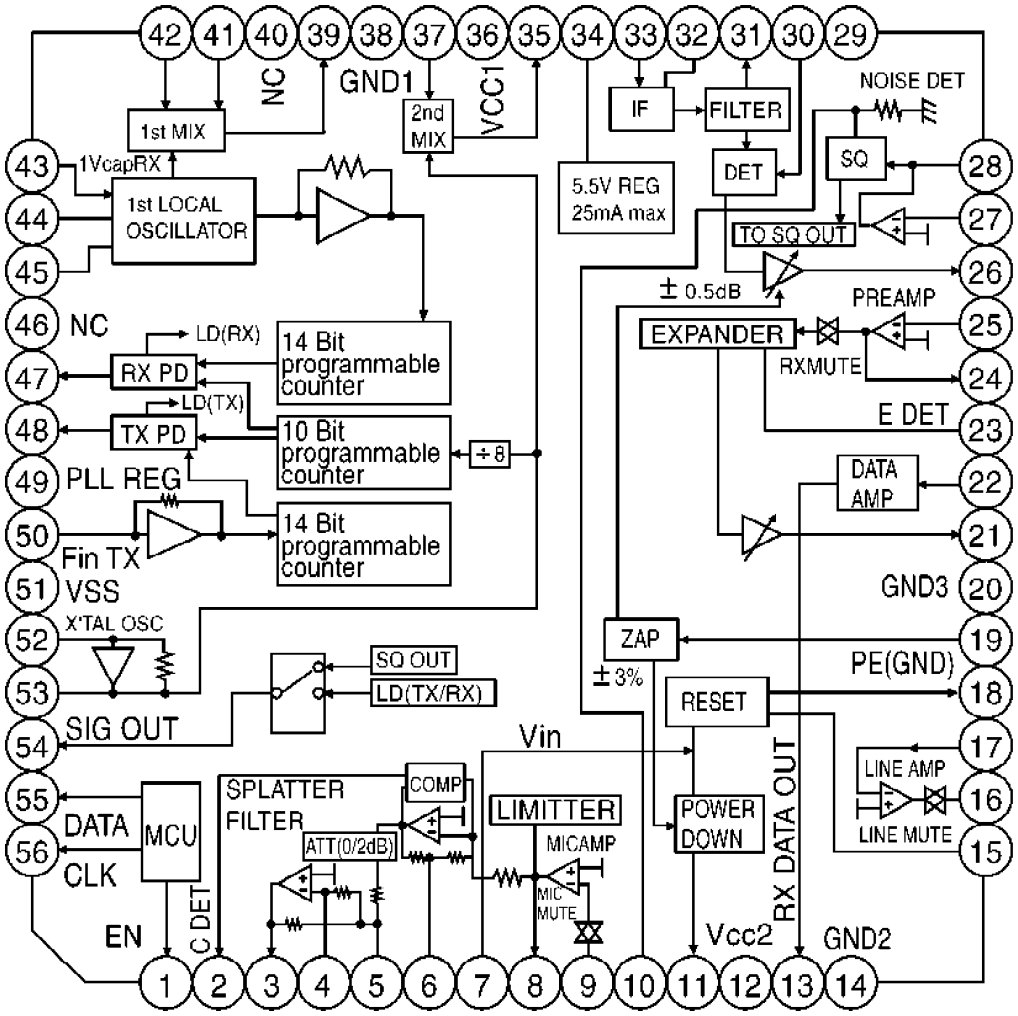


Pin	Description	I/O	High	High-Z	Low
1	KEY3	I	None	-	Key in
2	OP_I	I	None	-	Option provided
3	OP_J	I	None	-	Option provided
4	OP_K	I	None	-	Option provided
5	PDOWN	I	Normal	-	Power down
6	VREF+	-	-	-	-
7	VDD	-	-	-	-
8	OSC2	O	-	-	-
9	OSC1	I	-	-	-
10	VSS	-	-	-	-
11	32K	I	-	-	-
12	32K	O	-	-	-
13	MMOD	I	-	-	-
14	TXDPLL	O	(data)	-	Normal
15	PLLEN	O	Latch	-	Normal
16	CLKPLL	O	(clock)	-	Normal
17	TXDLCD/ROM	O	(data)	-	Normal
18	RXDROM	I	(data)	-	(data)
19	CLKLCD/ROM	O	(clock)	-	Normal
20	BUZZER	O	Normal	-	(beep)
21	MAINRESET	I	Normal	-	Reset
22	CSBLCD	O	Normal	-	Select
23	RSLCD	O	Data	-	Instruction
24	RESETLCD	O	Normal	-	Reset
25	CSROM	O	Select	-	Normal
26	LCDPOWER	O	off	-	on
27	RXDRF	I	(data)	-	(data)
28	RXDCHARGE	I	-	-	-
29	SIGINRF	I	Weak electric field	-	Strong electric field
30	CHARGEDET	I	Normal	-	Charge
31	31	I	-	-	-
32	LCDLIGHT	O	on	-	off

Pin	Description	I/O	High	High-Z	Low
33	TXDRF	O	(data)	-	Normal
34	PSAVERF	O	on	-	off
35	BUZZERCONT	O	Low	-	High
36	TXPOWER	O	off	-	on
37	NORMAL/TRICLE	NCH OD	Normal	Trickle	-
38	TXPOWER	O	-	-	(fixed)
39	39	O	-	-	(fixed)
40	40	O	-	-	(fixed)
41	41	O	-	-	(fixed)
42	42	O	-	-	(fixed)
43	43	O	-	-	(fixed)
44	44	O	-	-	(fixed)
45	OP_L	O	None	-	Option provided
46	OP_M	O	None	-	Option provided
47	OP_N	O	None	-	Option provided
48	OP_O	O	None	-	Option provided
49	TEST	O	SIG OUT	-	SIG OUT
50	STB0	O	Normal	-	Active
51	STB1	O	Normal	-	Active
52	STB2	NCH OD	-	Normal	Active
53	STB3	NCH OD	-	Normal	Active
54	STB4	NCH OD	-	Normal	Active
55	STB5	NCH OD	-	Normal	Active
56	STB6	NCH OD	-	Normal	Active
57	LED_BACKLIGHT0	NCH OD	-	off	on
58	LED_BACKLIGHT1	NCH OD	-	off	on
59	LED_BACKLIGHT2	NCH OD	-	off	on
60	LED_BACKLIGHT3	NCH OD	-	off	on
61	VREF (VSS)	-	-	-	-
62	KEY0	I	None	-	Key in
63	KEY1	I	None	-	Key in
64	KEY2	I	None	-	Key in

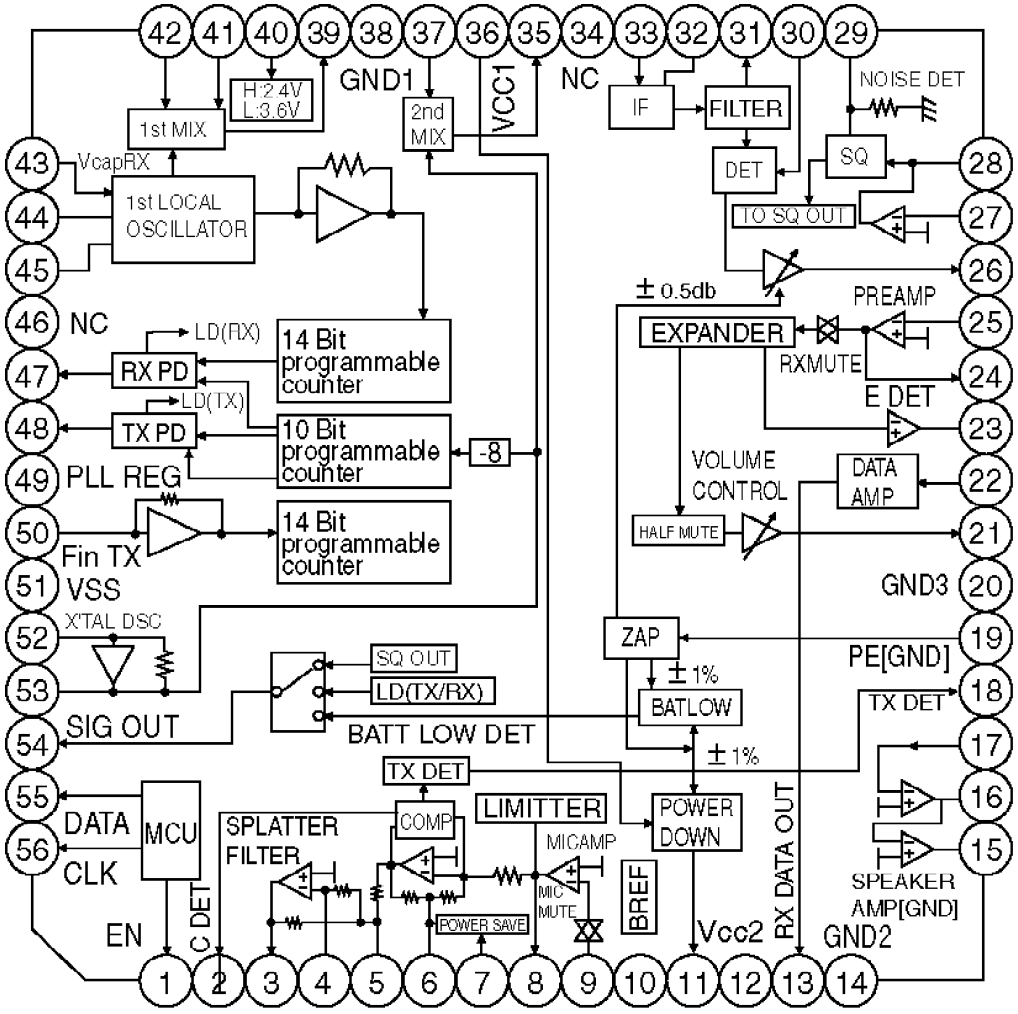
10. EXPLANATION OF IC TERMINALS

10.1. Base Unit: IC801


42
41
40
39
38
37
36
35
34
33
32
31
30
29
NC
GND1
VCC1
1st MIX
2nd MIX
IF
FILTER
NOISE DET
43
1VcapRX
1st LOCAL OSCILLATOR
5.5V REG 25mA max
DET
SQ
28
44
27
TO SQ OUT
45
26
± 0.5dB
PREAMP
46
NC
LD(RX)
14 Bit programmable counter
EXPANDER
25
47
RX PD
RXMUTE
24
LD(TX)
48
TX PD
10 Bit programmable counter
÷8
E DET
23
49
PLL REG
DATA AMP
22
50
14 Bit programmable counter
21
Fin TX
51
VSS
GND3
20
52
X'TAL OSC
ZAP
19
SQ OUT
PE(GND)
53
LD(TX/RX)
± 3%
RESET
18
54
SIG OUT
Vin
17
LINE AMP
55
SPLATTER FILTER
COMP
LIMITTER
POWER DOWN
RX DATA OUT
16
DATA
MCU
ATT(0/2dB)
MICAMP
LINE MUTE
56
CLK
MIC MUTE
15
EN
C DET
Vcc2
GND2
1
2
3
4
5
6
7
8
9
10
11
12
13
14

Pin. No.	Description	Pin. No.	Description
1	EN	29	IF-VREF
2	C-DET	30	QUAD
3	SF-OUT	31	BM-OUT
4	SF-C2	32	IF-REF
5	SF-C1	33	IF-IN
6	COMP-DC	34	VREG
7	PD-IN	35	MIX2-OUT
8	MIC-OUT	36	VCC1
9	MIC-IN	37	MIX2-IN
10	SQ-DET	38	GND1
11	PD-OUT	39	MIX1-OUT
12	VCC2	40	NC
13	D-OUT	41	MIX1-IN1
14	GND2	42	MIX1-IN2
15	RESC	43	VA-CONT
16	L IN-IOUT	44	VCOT1
17	L IN-IN	45	VCOT2
18	RESET	46	NC
19	PE	47	RX-PD
20	GND3	48	TX-PD
21	EXP-OUT	49	VDD
22	D-IN	50	fINT
23	E-DET	51	VSS
24	Pre-AMP-OUT	52	OSCI
25	Pre-AMP-IN	53	OSCO
26	DET-OUT	54	Sig-Out
27	NF-IN	55	DATA
28	NF-OUT	56	CLK

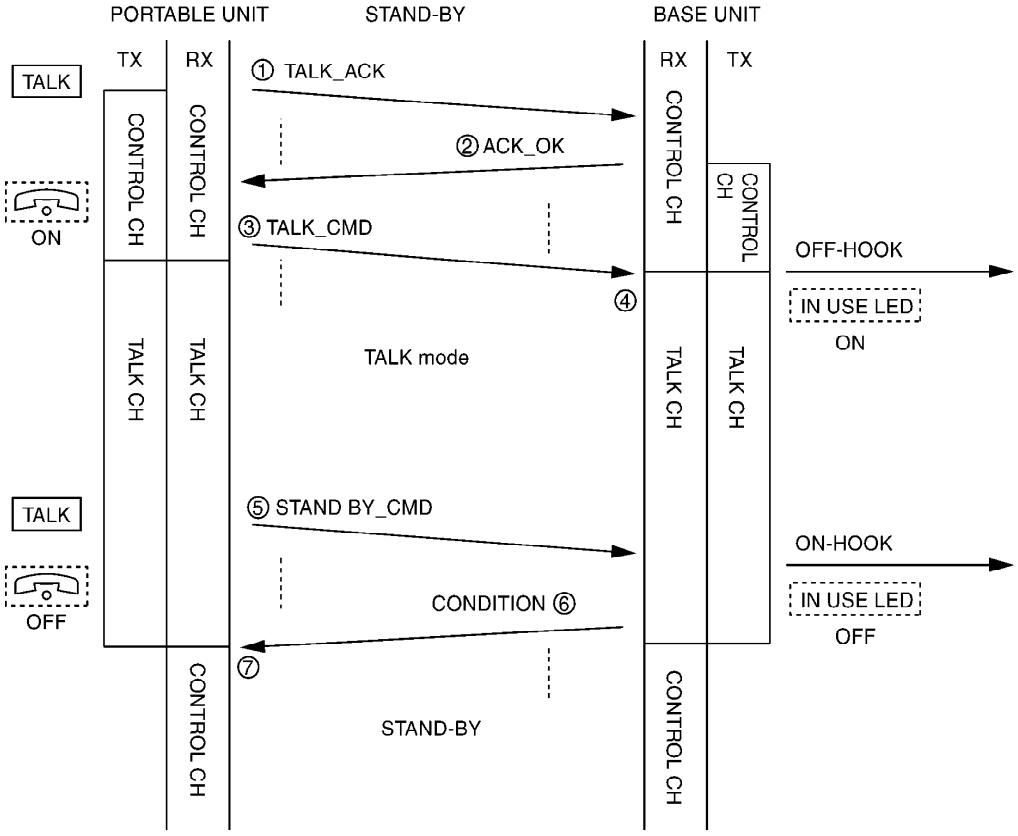
10.2. Portable Unit: IC101



Pin. No.	Description	Pin. No.	Description
1	EN	29	N-DET
2	C-DET	30	QUAD
3	SF-OUT	31	PH-OUT
4	SF-P	32	IF-PASS
5	COMP-OUT	33	IF-IN
6	COMP-REF	34	IF-VREF
7	PD IN	35	2MIX-OUT
8	MIC-OUT	36	VCC 1
9	MIC-IN	37	2MIX-IN
10	BREF	38	GND 1
11	PD OUT	39	1MIX-OUT
12	VCC 2	40	PDSW
13	DATA-AMP-OUT	41	RF-IN2
14	GND 2	42	RF-IN1
15	SP-OUT2	43	VA-CONT
16	SP-OUT1	44	1st-Lo1
17	SP-IN	45	1st-Lo2
18	TX-DET	46	NC
19	PE	47	RX-PD
20	GND 3	48	TX-PD
21	VOL OUT	49	PLL-REG
22	DATA-AMP-IN	50	F IN TX
23	E-DET	51	VSS
24	Pre-AMP-OUT	52	2Lo-IN
25	Pre-AMP-IN	53	2Lo-OUT
26	DET-OUT	54	Sig-Out
27	N FIL-IN	55	DATA
28	N FIL-OUT	56	CLK

11. EXPLANATION OF CPU DATA COMMUNICATION

11.1. STAND-BY → TALK, TALK → STAND-BY

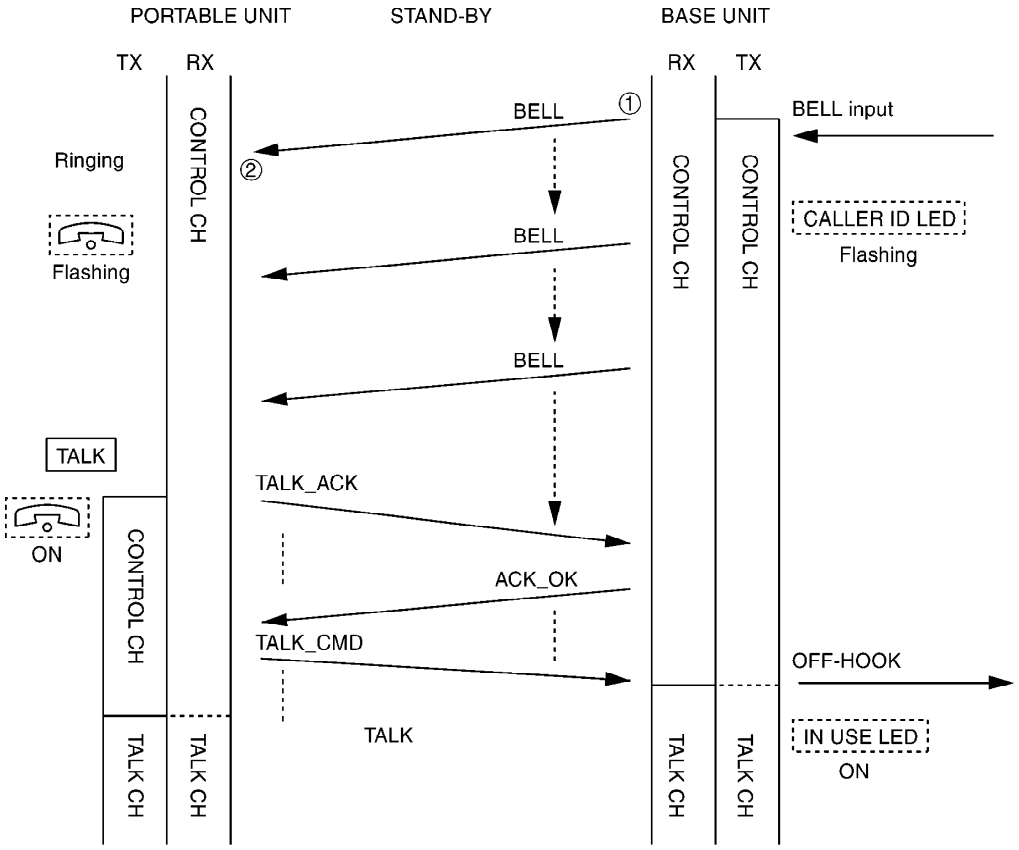


Press the TALK button

① The portable unit transmits TALK_ACK at the control channel.
② Then base unit transmits ACK_OK including the vacant TALK channel.
③ The portable unit transmits TALK_CMD, then moves to the vacant TALK channel.
④ The base unit moves to the TALK channel on receiving TALK_CMD.
Press the TALK button.
⑤ The portable unit transmits STNDBY_CMD at the TALK channel.
⑥ The base unit transmits CONDITION at the TALK channel, then moves to the control channel when the transmission has been completed.
⑦ The portable unit moves to the control channel after receiving CONDITION.

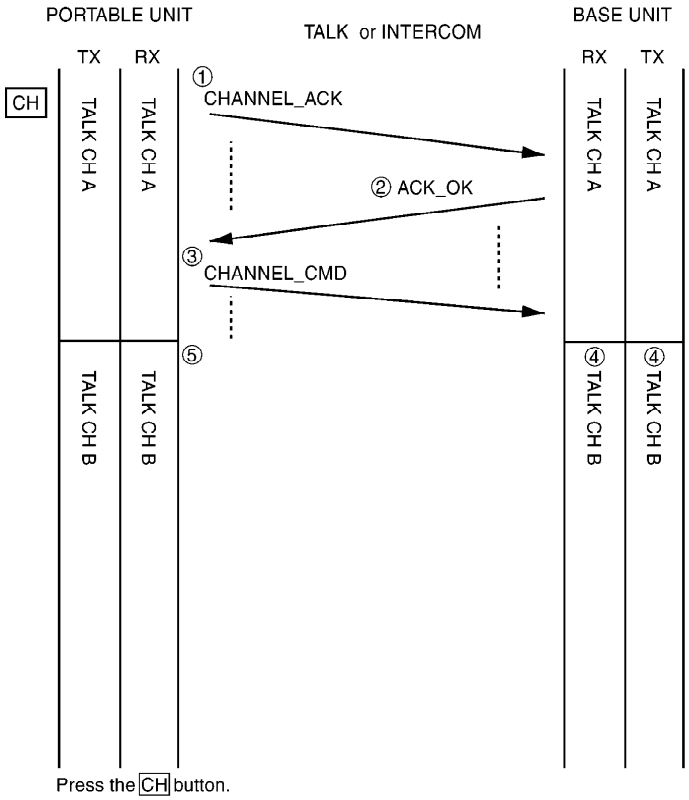
Note: The control channel is determined according to the ID code. (Control channel = The remainder when the ID is divided by 10)

11.2. Ringing



① When the bell signal is input, the base unit transmits BELL at the control channel.
② The portable unit rings the bell on receiving BELL.

11.3. Changing the channel



① The portable unit transmits CHANNEL_ACK at the TALK channel A.
② The base unit replies with ACK_OK including "vacant channel number B" at the TALK channel A.
Note: The "vacant channel number B" is selected at random by the base unit.
③ Then portable unit transmits CHANNEL_CMD at the TALK channel A.
④ The base unit moves to the TALK channel B after receiving CHANNEL CMD on channel A.
⑤ The portable unit moves to the TALK channel B when the transmission of CHANNEL_CMD has been completed.

11.4. Ports for transmitting and receiving of data

Portable Unit: / transmitting (TX) ... 33 Pin / receiving (RX) ... 27 Pin

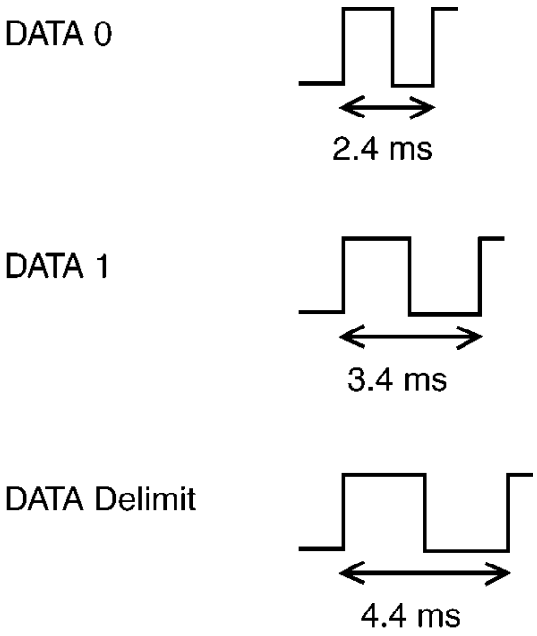
Base Unit: / transmitting (TX)... 21 Pin / receiving (RX) ... 22 Pin

11.5. Waveform of DATA Used for Cordless Transmission and Reception

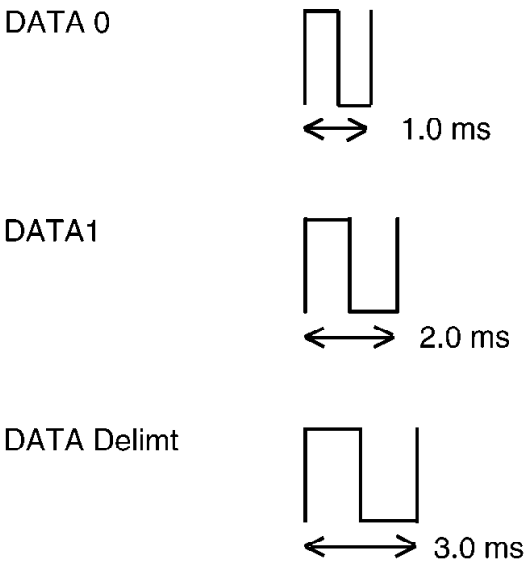
The DATA which is transmitted from the Handset to the Base Unit is combination of DATA 0, DATA 1, DATA Delimiter.
The DATA which is transmitted from the Base Unit to the Handset is combination of DATA 0, DATA 1, DATA Delimiter.

11.5.1. Handset

Transmitting DATA Element Format



11.5.2. BASE UNIT



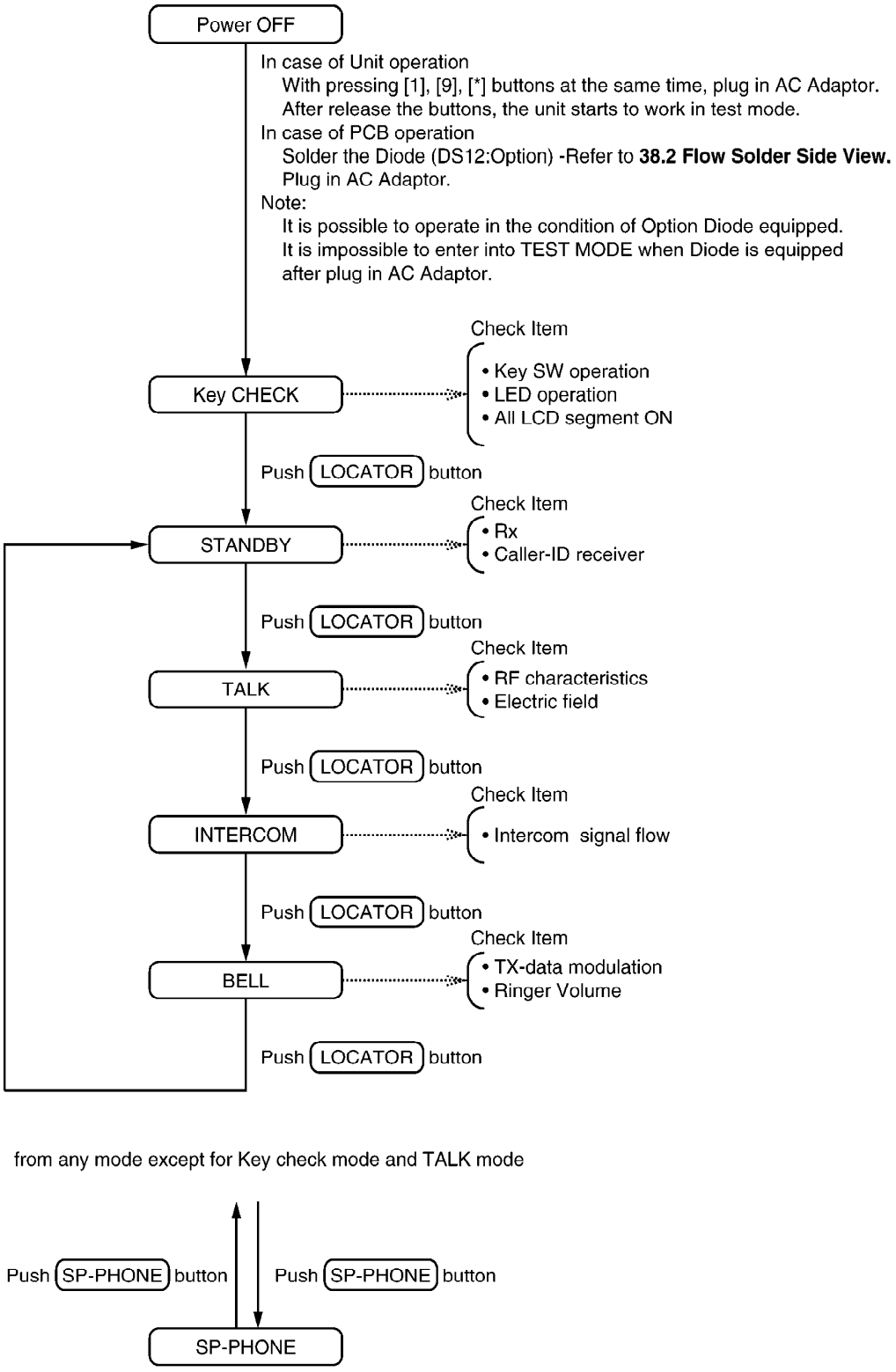
12. FREQUENCY TABLE (MHz)

Channel	BASE UNIT		HANDSET	
	Transmit Frequency	Receive Frequency	Transmit Frequency	Receive Frequency
1	43.720	49.670	49.670	43.720
2	43.740	49.845	49.845	43.740
3	43.820	49.860	49.860	43.820
4	43.840	49.770	49.770	43.840
5	43.920	49.875	49.875	43.920
6	43.960	49.830	49.830	43.960
7	44.120	49.890	49.890	44.120
8	44.160	49.930	49.930	44.160
9	44.180	49.990	49.990	44.180
10	44.200	49.970	49.970	44.200
Special channel for ID writing	44.320	50.090	50.090	44.320

13. TEST MODE

13.1. BASE UNIT

13.1.1. Test Mode Flow Chart (Base Unit)


Power OFF
In case of Unit operation
With pressing [1], [9], [*] buttons at the same time, plug in AC Adaptor.
After release the buttons, the unit starts to work in test mode.
In case of PCB operation
Solder the Diode (DS12:Option) -Refer to 38.2 Flow Solder Side View.
Plug in AC Adaptor.
Note:
It is possible to operate in the condition of Option Diode equipped.
It is impossible to enter into TEST MODE when Diode is equipped
after plug in AC Adaptor.
Key CHECK
Check Item
• Key SW operation
• LED operation
• All LCD segment ON
Push LOCATOR button
STANDBY
Check Item
• Rx
• Caller-ID receiver
Push LOCATOR button
TALK
Check Item
• RF characteristics
• Electric field
Push LOCATOR button
INTERCOM
Check Item
• Intercom signal flow
Push LOCATOR button
BELL
Check Item
• TX-data modulation
• Ringer Volume
Push LOCATOR button
from any mode except for Key check mode and TALK mode
Push SP-PHONE button
Push SP-PHONE button
SP-PHONE

13.1.2. Initial Condition in Test Mode

Channel	10CH
SP-Phone Vol.	Max
InterCOM Vol.	Max
Ringer Vol.	High
Dial Mode	PULSE(For pulse dial test)
Others	Factory-Release Initial Set-Up *Caller-ID data in Memory is all erased.

13.1.3. TEST MODE Function Check List

No.	Objectives	Operation and Unit action	Remarks
1	Status change	Refer to 13.1.1 Test Mode Flow Chart (Base Unit). / (Push locator or push SP-Phone)	
2	Channel change	To push UP button → Channel +1 / To push DOWN button → Channel -1	To operate in TA INTERCOM/STB only. / TX/RX da transmissionis n available.
3	KEY SW/LED operation	When pushing any Key except for LOCATOR button in KEY CHECK Status, -Confirmation tone sounds. -All LED are ON while pushing Key.	
4	DTMF signal check	On SP-Phone status, push the Dial button (12keys). / The DTMF signal corresponded to Dial button that is pressed will be sent to the line.	
5	SP-Phone function check	ON SP-Phone status, Microphone signal will be muted while "PROGRAM" button is pressed.	
6	Electromagnetic filed Strength check	In Use LED indicates the status of Electricfield detector circuit in the mode of TALK or INTERCOM. / Weak E. field : In Use LED - OFF / Strong E. field : In Use LED - ON	Setting of SIG-C terminal / STAN (Carrier Sense) ND (normal)
7	Caller-ID Receiver	In the mode of Standby, Caller-ID Signal is received, Caller-ID LED will be ON. (0.5sec)	
8	Other notices	The main difference of unit operation on Test Mode is described below, compare with normal operation. -Empty Channel Scan is not available. / (fixed channel TX/RX) -Weak Electric field detection is not available in TALK mode. -Unlock detection of Phase-lock loop is not available. -The judgment of ID code included of Receiving RF signal is not available.	To enable to inv and confirm the transmitter/ Rec circuit easily.

13.2. Portable Unit

13.2.1. Test mode Set Up Procedure

—Procedure 1 (In case of Unit operation)— / (Released Ni-Cd Battery status)

1. With pressing [1], [9], [*] buttons at the same time, plug in Ni-Cd Battery.
2. After release the buttons, Unit starts to work in test mode.

    - Confirmation tone sounds.
    - LCD lights all prompt.

   STATUS : Key test mode

—Procedure 2 (In case of Unit operation)— / (Apply power to the portable unit)

1. Press [TALK] key.
2. Press [5], [8], [0] keys at the same time,
3. You should hear the portable unit beep. Release the 3 keys.
   If you do not hear a beep, remove the power from the portable unit and repeat from “1. Press [TALK] key”.

    - LCD lights all prompt.

   STATUS : Key test mode

—Procedure 3 (In case of PCB operation)— / (Power OFF status)

1. Solder the Resister (R930 0Ω : Option)—Refer to 40.2 Flow Solder Side View.
2. Plug in Power.
3. Confirmation tone sounds.

    - LCD lights all prompt.

   STATUS : Key test mode

note:
It is possible to operate in the condition of Option Resister equipped.
It is impossible to enter into TEST MODE when Option Resister is equipped after plug in Power.

13.2.2. Initial Condition in Test Mode

Channel	**10CH**
Receive Vol.	**MEDIUM**
Ringer Vol.	**High**
Dial Mode	**TONE(For DATA Modulation Confirmation)**
Others	**Factory-Released Initial Set-Up**

13.2.3. TEST MODE Function Check List

No.	Objectives	Operation and Unit action	Remarks
1	Status change	TALK/STNDBY mode change every time push talk key.	
2	Channel change	To push [EXIT/CH] button → Channel +1 / To push [FLASH] button → Channel -1	To operate in TA STNDBY mode (TX/RX data tran is not available.
3	Check key Check LCD Check backlight LED	When pushing any Key except for TALK button in STNDBY mode -Confirmation pi sounds. -All LCD are ON. -Backlight LED of LCD and Key are ON.	
4	SIG-OUT terminal	In TALK mode, the output of the SIG-OUT terminal is switched pushing the dial button. -0:Normal output -1:Noise detect (Normal) -2:Noise detect (Carrier Sense) -3:Battery Low ← Default -4:PLL lock The logic of the SIG-OUT terminal is displayed by the antenna pict (For the monitor from the outside) -0:Normal display (Battery Low) -1:SIG-OUT display / SIG-OUT = "Hi" → Antenna picture OFF / SIG-OUT = "Lo" → Antenna picture ON However, if the above-mentioned dial button is not pushed, SIG-OUT terminal is not output to Antenna picture.	
5	Electro-magnetic filed Strength check	When pushing [1] key in TALK mode, Antenna picture display the condition of Electric field detected circuit. / Weak Electric field : Antenna picture OFF / Strong Electric field : Antenna picture ON	
6	Ringer level	In STANDBY mode, push NAVIGATOR ▲, ▼ key. -Portable unit is ringing while pushing the NAVIGATOR key. -▲=HIGH / ▼=LOW	

7	Other notices	The main difference of the unit's operation in the test mode is as follows compared with a normal mode. -Empty Channel Scan is available. (fixed channel TX/RX) -Unlock detection of Phase-lock loop is not available. -The judgement of ID code included of Receiving RF signal is not available.	

14. ADJUSTMENTS (BASE UNIT)

If your unit have below symptoms, adjust each item using remedy column from the table.

Symptom	Remedy
The base unit dose not respond to a call from the portable unit.	Make adjustments i
The base unit dose not transmit or the transmit frequency is off.	Make adjustments i
The transmit frequency is off.	Make confirmation i (C)
The transmit power output is low, and the operating distance between base unit and the portable unit is less than normal.	Make confirmation i (D)
The reception sensitivity of base unit is low with noise.	Make confirmation i (E)
The transmit level is large or small.	Make confirmation i
The reception level is large or small.	Make adjustments i
The unit does not link.	Make confirmation i (H)

Base unit is set to test mode then press "LOCATOR" key twice.

When replacing these parts, adjust as shown in table below table.

Replace Parts	Adjustment items	Test Mode	Adjustment Point	Procedure
IC801, T801 C841	(A) RX VCO Adjustment	CH10 Talk	T801	1. Set S11 to ON. 2. Adjust T801 so that the reading of the Digital Voltmeter is 1.5 V±0.1 V.
IC802 , D851 T851	(B) TX VCO Adjustment	CH10 Talk	T851	1. Set S3 , S11 ON. 2. Adjust T851 so that the reading of the Digital Voltmeter is 1.7 V±0.1 V.
DUP802, X801 C835, C836	(C) TX Frequency Confirmation	CH10 Talk	——	1. Set S4 to ON. 2. Comfirm so that the reading of the frequency counter is 44.200 MHz±0.7 kHz.
R864, IC802 R862, C861	(D) TX Power Confirmation	CH10 Talk	——	1. Set S8 to ON. 2. Confirm that TX Power is more than +10 dBm.
DUP801 CF801 CF802	(E) RX Sensitivity Confirmation (2nd IF output)	CH10 Talk	——	1. Set S6, S7 to ON. 2. Apply a 60dB μ Vemf output from S.S.G. (modulation frequency 1 kHz, dev. 0 kHz). 3. Confirm that the reading of the RF VTVM is maximum output (more than 30 mV).
IC801	(F) Line Output Level Confirmation	CH10 Talk	——	1. Set S6, S5 to ON. 2. Apply a 40dB μ Vemf output from S.S.G (modalation frequency 1kHz. dev. 3kHz). 3. Adjust VR402 so that the reading of the AF VTVM is -11 dBm ± 3.0 dBm (600oad).
IC801 D851	(G) Line Input Modulation Adjustment	CH10 Talk	VR701	1. Set S6, S9 and S10 to ON. 2. Input via loop simulator 1.0 kHz, -25.0 dBm (measured at T-R) signal. 3. Apply a 40 dB μ Vemf output from S.S.G. (modulation frequency 1 kHz, dev. 0 kHz). 4. Adjust VR401 so that the reading of the FM Deviation Meter is 3.1 kHz±0.2 kHz.
IC801 DUP801	(H) Noise Squelch Confirmation	CH10 Talk	——	1. Set S6, to ON. 2. Measure the SSG output level when the noise squelch changes LOW to HIGH. 3. The SSG output level is -3~+12 db μ Vemf.

The connection of adjustment equipments are as shown in 30.2 Flow Solder Side View, 38.2 Flow Solder Side View.

15. ADJUSTMENTS (PORTABLE UNIT)

If your unit have below symptoms, adjust each item using remedy column from the table.

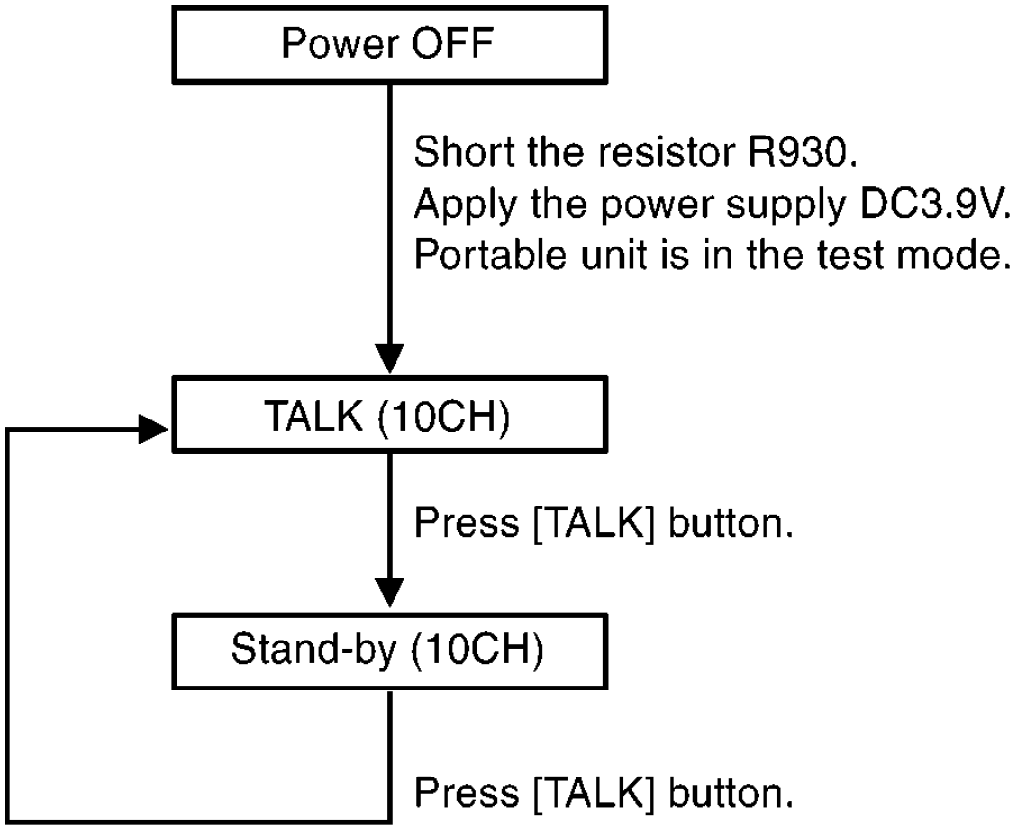
Symptom	Remedy
The movement of Battery Low Indicator is wrong.	Make confirmation in item (A)
The base unit does not respond to a call from handset.	Make adjustment in item (B)
The base unit does not transmit or the transmit frequency is off.	Make adjustment in item (C)
The transmit frequency is off.	Make confirmation in item (D)
The transmit power output is low, and the operating distance between base unit and handset is less than normal.	Make confirmation in item (E)
The reception sensitivity of base unit is low with noise.	Make confirmation in item (F)
Does not link between base unit and handset.	Make confirmation in item (G)
The reception level is high or low.	Make confirmation in item (H)
The transmit level is high or low.	Make adjustment in item (I)

Unit condition:

1. **Remove the antenna lead wire from P.C Board of Portable Unit.**
2. **Power Supply: DC 3.9V**
3. **Volume: HIGH (When P.C. Board of the portable unit is in test mode, volume condition is medium.Press Navigator key ▲ once.)**
4. **Speaker Load: 150 Ω**

CH	TX Frequency	RX Frequency
CH10	49.970MHz	44.200MHz

15.1. Test Mode Flow Chart (Portable unit)



15.2. How to set the test mode

CH10 Test Mode

1. Before setting portable unit to test mode, charge portable unit with battery on the base set.
2. After connecting the resistor R930 and apply a power supply DC 3.9 V. (The unit becomes CH10 Talk)
3. Press TALK button. (The unit becomes CH10 standby)
4. Press TALK button.
5. Press EXIT/CH button.

CH10 → CH1 → CH2·····CH9

6. Press the FLASH button.

CH10 → CH9 → ····· → CH1

*** Refer to 40 CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM (PORTABLE UNIT). / R930 : 0 Ω resistor**

15.3. Adjustment

When replacing these parts, adjust as shown in table below.

Replace Parts	Adjustment items	Test Mode	Adjustment Point	Procedure
IC101	(A) Battery Low Confirmation	CH10 Talk	—	1. Set S1, S10 to ON. 2. Set the power supply voltage to DC 3.65 V, and confirm so that the reading of oscilloscope is High. 3. Set the power voltage to DC 3.45 V, and confirm so that the reading of oscilloscope is Low.
IC101, X101, T301, VD301	(B) TX VCO Voltage Adjustment	CH10 Talk	T301	1. Set S2 to TX VCO side. 2. Adjust T301 so that the reading of digital voltmeter is 1.5 V ±0.1 V (After adjusting, set S2 to OFF).
IC101, X101, T201	(C) RX VCO Voltage Adjustment	CH10 Talk	T201	1. Set S2 to RX VCO side. 2. Adjust L5 so that the reading of digital voltmeter is 1.2 V ± 0.1 V (After adjusting, set S2 to OFF).
X101, IC101 C141, C142	(D) TX frequency Confirmation	CH10 Talk	—	1. Set S3 to ON. 2. Confirm that the reading of frequency counter is 49.970 MHz ± 700 Hz .
DUP301 IC301	(E) TX Power Confirmation	CH10 Talk	—	1. Set S4 to ON (S3:OFF). 2. Output level should be over 9dBm on RF VTVM (50 Ω).
DUP101 IC101 CF1 CF2	(F)RX Confirmation (2nd IF Output)	CH10 Talk	—	1. Set S7, S8 to ON. 2. Apply a 60dBμVemf output from S.S.G. (modulation frequency 1kHz, dev. 0kHz) 3. Comfirm 2nd IF output so that its reading of RF VTVM is more than 15mV.
DUP101 IC101	(G) Noise Squelch Confirmation	CH10 Talk		1. Set S1, S8 on. 2. Press "1" key to set Noise Squelch Mode. 3. Apply a -3dBμVemf output from S.S.G. (modulation frequency 1.0kHz, dev. 3kHz). 4. Oscilloscope become High. 5. Apply a +12dBμVemf output from S.S.G. (modulation frequency 1.0kHz, dev. 3kHz). 6. Oscilloscope become Low.
IC101	(H) Speaker Output Level Confirmation	CH10 Talk	—	1. Set S5, S7 to ON. 2. Apply a 40 dBμVemf output from S.S.G.(modulation frequency 1kHz, dev. 3kHz). 3. Confirm that SP output level is -11 ± 5dBm. (distortion: less than 6%) (volume: MAX)
IC301 VD301	(I) MIC Modulation Factor Adjustment	CH10 Talk	VR901	1. Set S7, S9, S11 to ON. 2. Apply a MIC signal (1kHz, -40 dBm at 600 Ω). 3. Confirm that the reading of FM Deviation Meter is 3.6kHz ± 0.7kHz.
	(J) Data Moudulation Confirmation	CH10 TALK	—	1. Set S11 to ON. 2. Keep pressing the "1" button. 3. Confirm for a 4.0~8.5 kHz FM Deviation Meter reading.

The connections of adjustment equipments are as shown in 40.1 Component View, 40.2 Flow Solder Side View.

16. RF SPECIFICATION

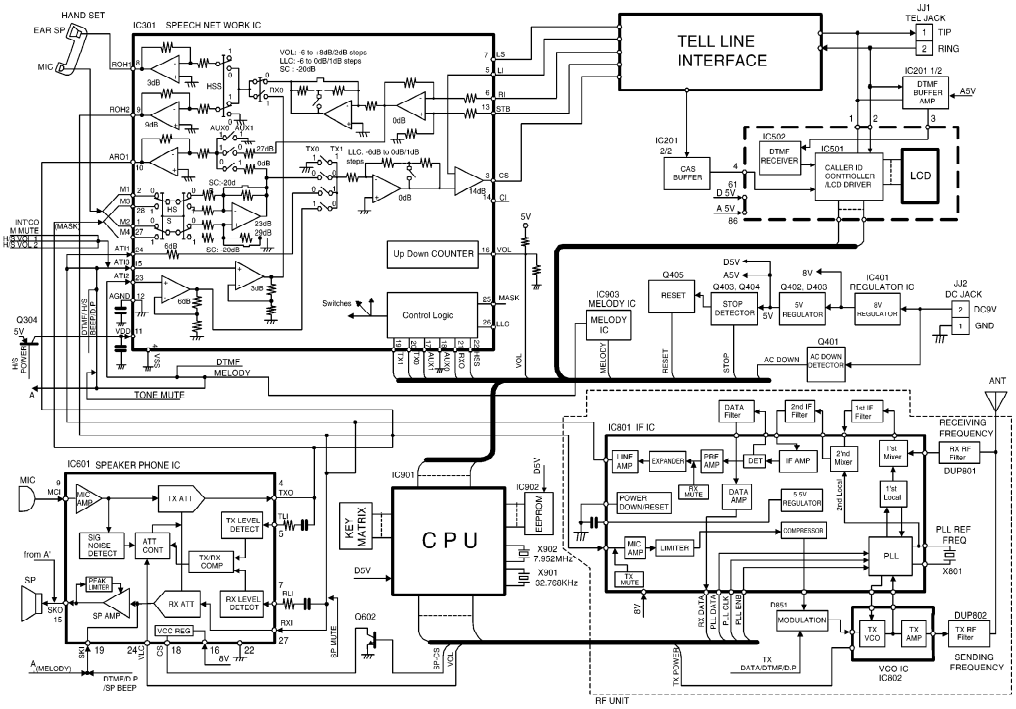
16.1. Base Unit

Item	Value	Refer to -.	Remarl
Receiving Sensitivity	Less than +12 dB μ Vemf	-	
Noise Squelch	-3 ~ +12 dB μ Vemf	14 ADJUSTMENTS (BASE UNIT) (H)	
TX Frequency	44.200 MHz ±700 Hz	14 ADJUSTMENTS (BASE UNIT) (C)	at CH10
TX Power	more than +10 dBm (CH10)	14 ADJUSTMENTS (BASE UNIT) (D)	at CH10
Line Modulation factor	2.9 kHz ~ 3.3 kHz	14 ADJUSTMENTS (BASE UNIT) (G)	at CH10
Line Modulation Distortion	Less than 7%	-	at CH10
Line Modulation factor (Max.)	4.5 kHz ~ 8.5 kHz	-	at CH10
Data Modulation factor	4.0 kHz ~8.0 kHz	-	at CH10

16.2. Portable Unit

Item	Value	Refer to -.	Remarl
Receiving Sensitivity	Less than 12 dB μ Vemf	-	at CH10
Noise Squelch	49.970 MHz ±700 Hz -3 ~ +12 dB μ Vemf	15 ADJUSTMENTS (PORTABLE UNIT) (G)	Low → High a
TX Frequency	49.970MHz ± 700 Hz	15 ADJUSTMENTS (PORTABLE UNIT) (D)	at CH10
TX Power	more than +9 dBm	15 ADJUSTMENTS (PORTABLE UNIT) (E)	at CH10 (Ante soldering poir Load)
Data Modulation factor	4.0 kHz/dev ~ 8.0 kHz/dev	15 ADJUSTMENTS (PORTABLE UNIT) (J)	at CH10
MIC Modulation factor	3.1 kHz/dev ~ 4.3 kHz/dev	15 ADJUSTMENTS (PORTABLE UNIT) (I)	at CH10 (Mic t 40dBm Input)

17. BLOCK DIAGRAM (BASE UNIT)

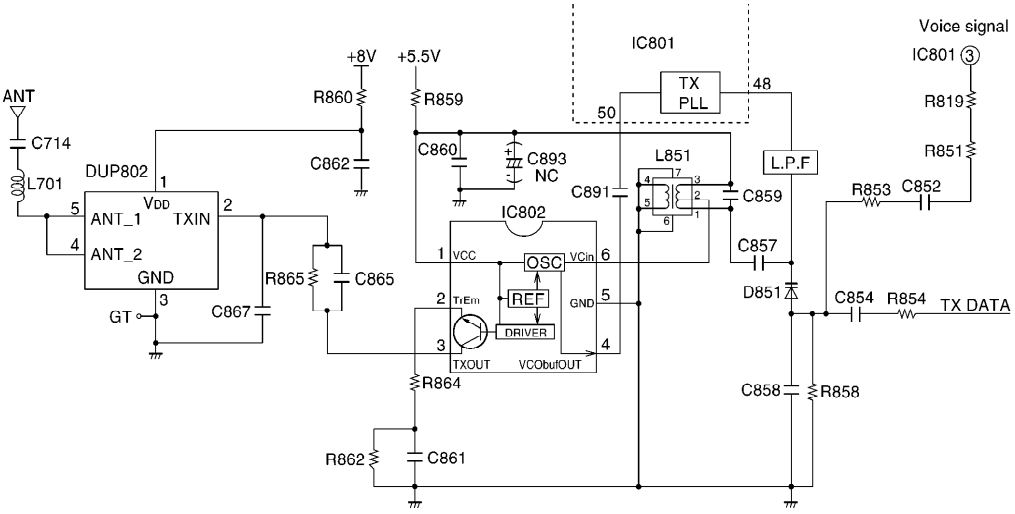


18. CIRCUIT OPERATION (BASE UNIT)

18.1. Transmitter Circuit

The voice signal or the data signal sent to the handset is applied in the anode of the variable capacitor diode (VARICAP) D851. The capacitance of VARICAP is changing in accordance with the Voice signal or TX DATA signal. Therefore, the carrier frequency which is generated by IC802 and L851 will be changing, and Frequency modulated RF signal is generated. Then, amplified by IC802 - Amplifier part, pass through the duplexer, and radiated from Antenna.

<Fig 101>

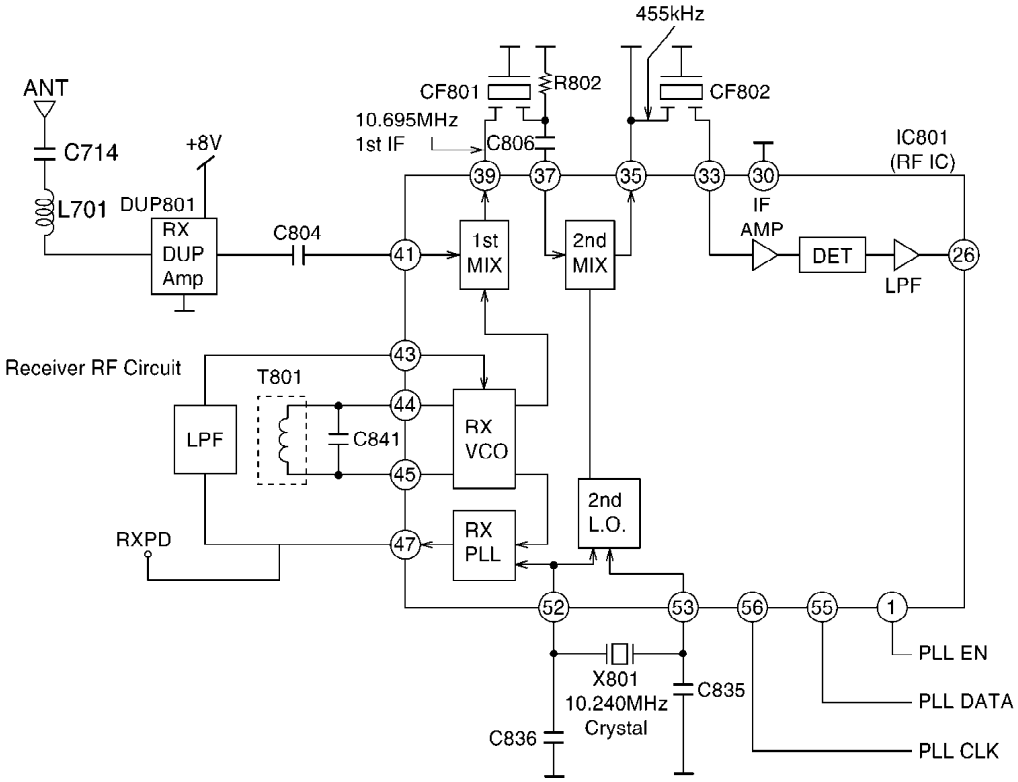


18.2. Receiver RF IF Circuit

18.2.1. Circuit Operation:

The signal of 49MHz band (49.670Å`49.99MHz) which is input from ANT is filtered at DUP801, then it is input to Pin 41 of IC801. 1st local frequency is decided by the serial data which is output from Pin 11, 12 and 14 of IC901 and controlled by phase lock-loop system (PLL). PLL system is constructed by RX VCO (T801), RX PLL and LPF. RX VCO which oscillates at T801 and Pins 44, 45 of IC801 is input to programmable controller at inside of IC801. The input signal, Pin 41 of IC801and 1st local frequency output from RX VCO are mixed at inside of IC801.
The phase-detector signal that indicates the difference between the current oscillation frequency and the desired one is feed backed to the voltage controlled oscillator. Then the frequency difference is reduced and finally locked to the desired frequency (1st local one). Also 1st local frequency is mixed with the received RF signal. Then it passes through CF801, and 1st IF frequency of 10.695MHz is generated. Further, 10.240MHz which is oscillated at X801 and Pins 52,53 of IC801 are mixed at inside of IC801 and filtered at CF802, and 2nd IF 455kHz is output.

<Fig 102>



18.3. Telephone Line Interface Circuit

18.3.1. On Hook (Ringer)

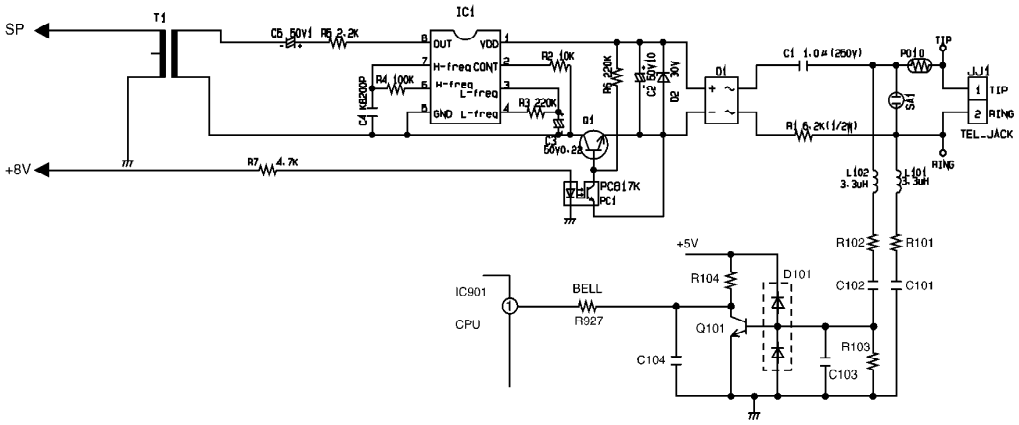
The unit is consegnently in an on-hook condition. In the on-hook state (idle), the AC current loop which flows between the telephone line and unit is as follows.
Tip → P01 → L102 → R102 → C102 → Q101 → C101 → R101 → L101 → Ring
In power failure mode
Tip → P01 → C1 → D1 → IC1 → Q1 → D1 → R1 → Ring
The DC current is blocked by C101, C102: thereby providing an on-hook condition. / The AC interface impedance is over the sum of R101 and R102.

18.3.2. Ringer Circuit

When the bell signal is received from the line, it passes through L101, R102, C102, R103, C101, R101 and L101. Also Q101 turns "ON". As a result, Pin1 of IC901 becomes low level. In this way, a ringer signal detected by IC901. / In power failure mode, the bell signal passes through C1, D1 and Q1 turns on, then supplying power to Pin1 of IC1, and the ring signal is output from Pin1 of IC8.

Circuit Diagram

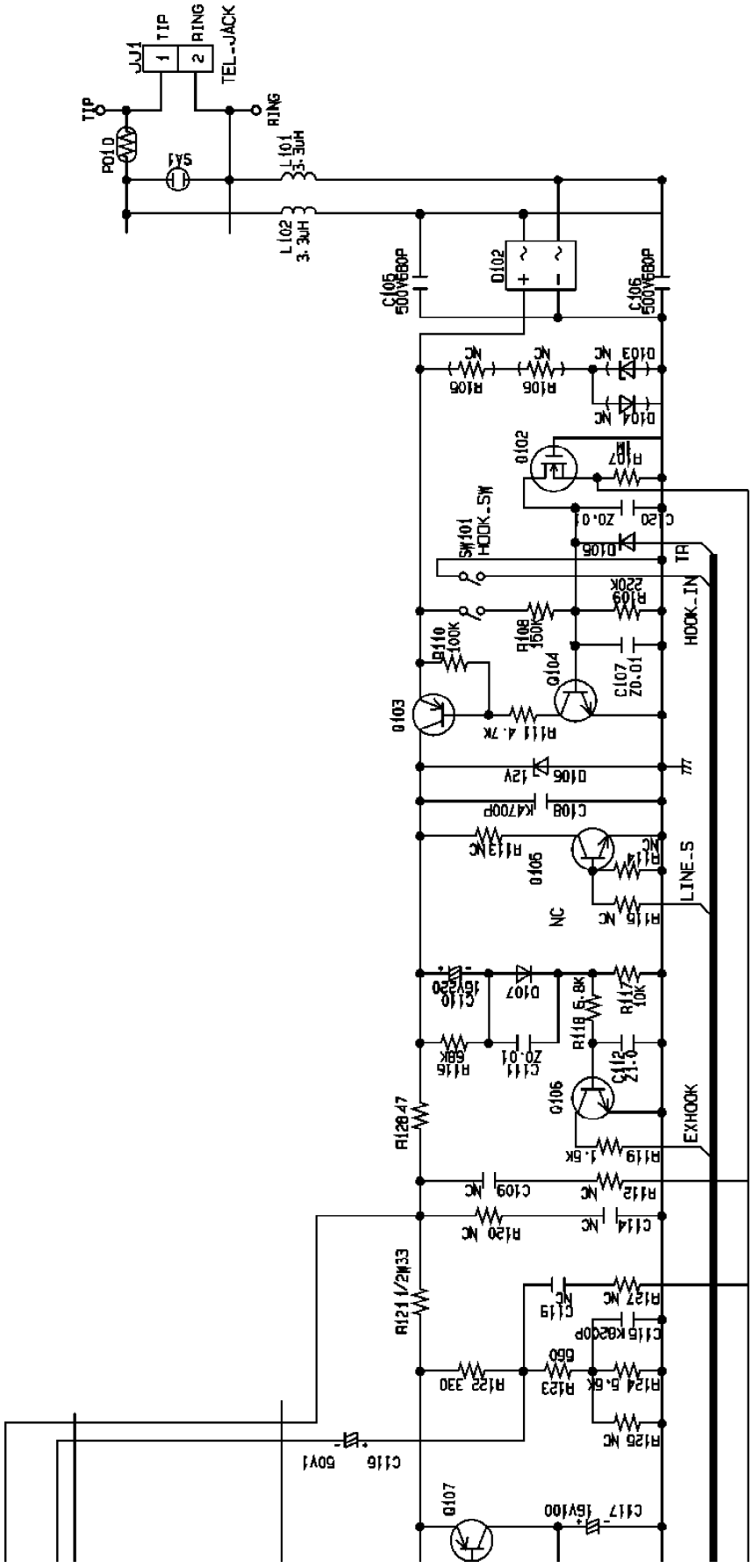
(Fig 103)

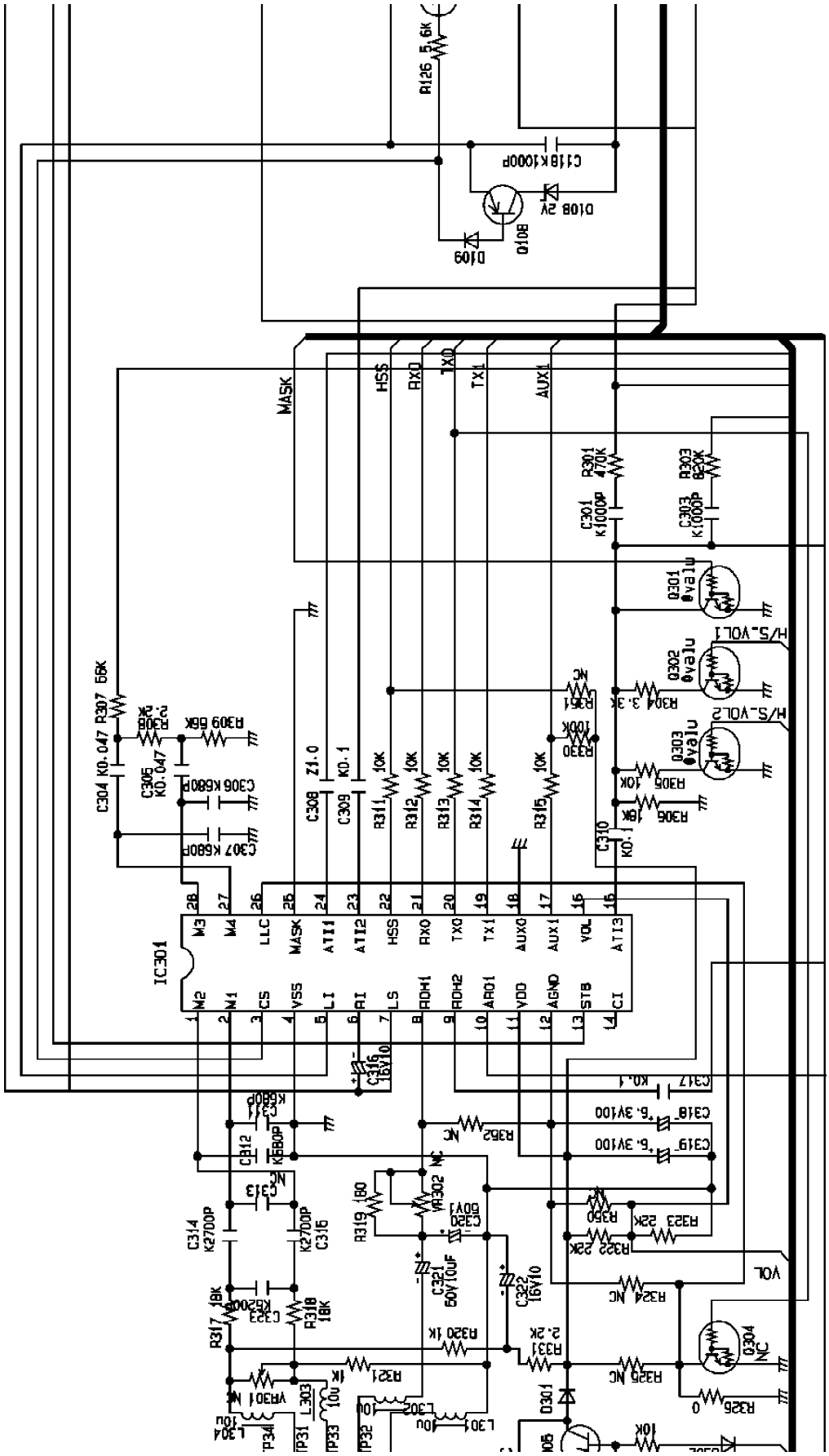


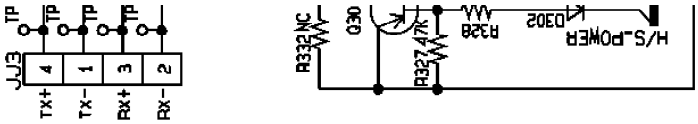
18.3.3. Line Interface Signal Flow (OFF HOOK)

The signal from line goes through the following pass. / tip → P01 → L102 → D102 → Q103 → R128 → IC301 Pin6 / The signal to line goes through the following pass. / IC301 Pin3 → R126 → Q107 → Q103 → D102 → L102 → P01 → tip

Circuit Diagram / <Fig 104>


TIP
RING
TEL-JACK
L101
3.3uH
L102
3.3uH
D102
C105
500V680P
C106
500V680P
SW101
HOOK-SW
HOOK_IN
TR
LINE-S
EXHOOK
Q102
Q103
Q104
Q105
Q106
Q107
D106
12V
C108
R113
R114
R115
NC
R119
1.5K
R120
R121 1/2W33
R122
330
R123
R124
5.6K
R125
R126
47
C116
50V1
C117
16V100


MASK
HSS
RXD
TXD
TX1
AUX1
IC301
R126 5.6K
C118 K1000P
D108 2V
Q010
D109
R307 68K
R308 68K
R309 68K
C304 K0.047
C305 K0.047
C306 K680P
C307 K680P
C308 Z1.0
C309 K0.1
R311 10K
R312 10K
R313 10K
R314 10K
R315 10K
R330 100K
R304 3.3K
R305 10K
R306 10K
C310 K0.1
R301 470K
R303 82K
C301 K1000P
C303 K1000P
Q301 Value
Q302 Value
Q303 Value
H/S_VOL1
H/S_VOL2
C312 K680P
C313 NC
C314 K2700P
C316 K2700P
R317 18K
R318 18K
C323 K2200P
R319 180
VR302 50K
C320 50V10UF
C321 50V10UF
C322 16V10
R320 1K
R321 1K
VR301 NC
L304 10U
L303 10U
L302 10U
L301 10U
TP34
TP31
TP33
TP32
C317 K0.1
C318 6.3V100
C319 6.3V100
R352 NC
R350 22K
R323 22K
R324 NC
R331 2.2K
R325 NC
R326 0
Q304 NC
D301
Q305
10K
VOL

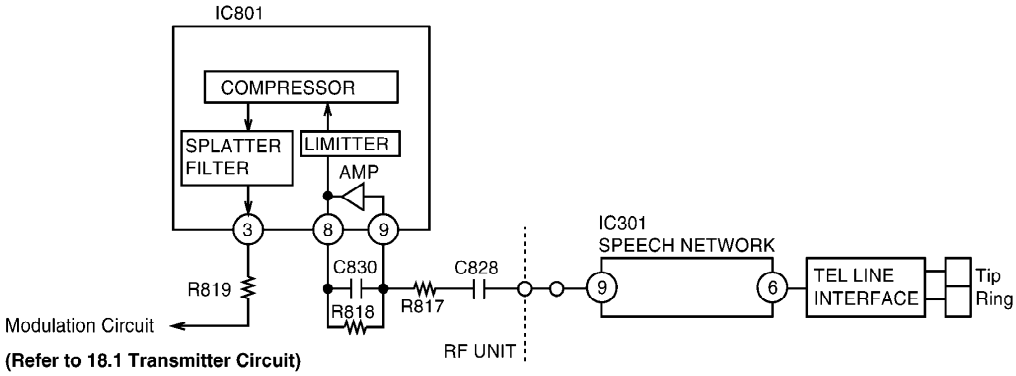


18.4. Receiving Signal Flow from TEL Line To RF

18.4.1. Circuit Operation:

1. The signal input from the TEL LINE goes through IC301(6) → IC301(9) → C317 → VR701 → C707 → R708 → R709 → C828 → R817 and it is input to the signal amplifier of IC801, pin 9. This amplifier is included in a limiter circuit.Signal goes through the compressor and SPLATTER FILTER, it is output in the pin 3 of IC801. Then it goes out to the modulation circuit.

<Fig 105>

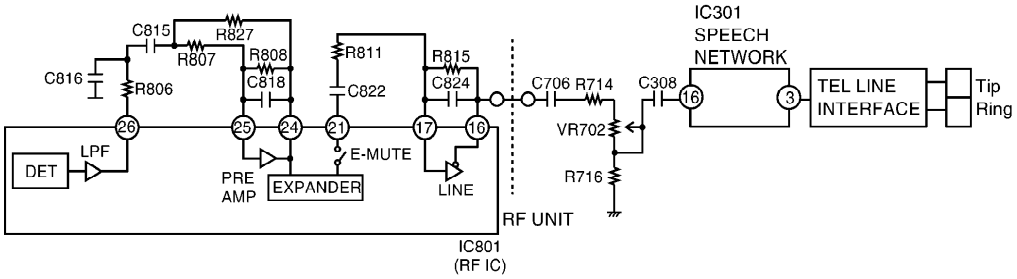


18.5. Receiver Signal Circuit

18.5.1. Circuit Operation:

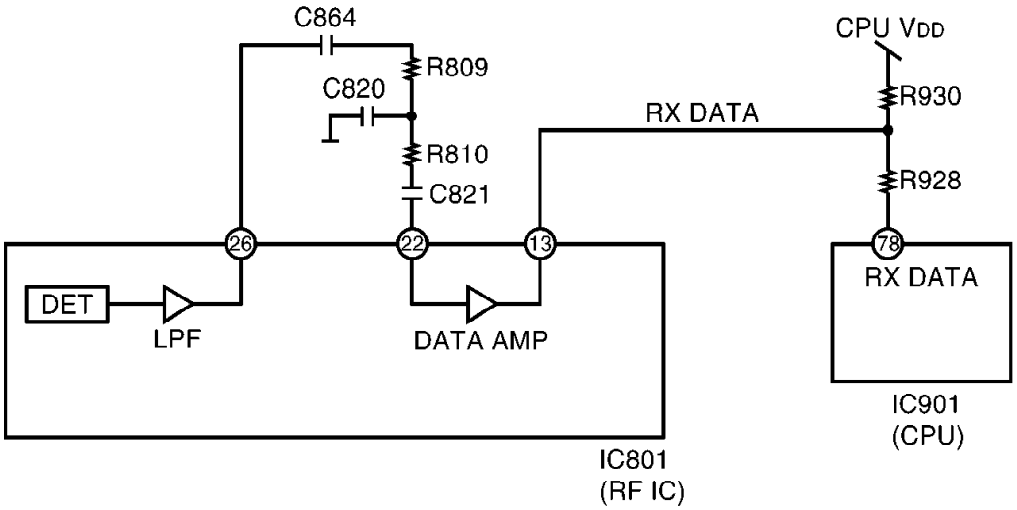
1. The detected signal passes through R806 → C815 → R807 and it is input to the Pre Amplifier inside of IC801; it passes through the expander and goes out from pin 21 of IC801.
2. The signal passes through C822 → R811 and it is input to the Receiver Amplifier of IC801, on pin 17.
3. The signal is output from the amplifier on pin 16 of IC801 and it goes through C706 → R714 → VR702 → C308 → IC301(24) → IC301(3), to the telephone line.

<Fig 106>



18.5.2. Explanation of the Data Reception Circuit of Base Unit

<Fig 118>



In area where the transmission power from the handset is extremely weak, noise is superimposed on the data and the chance of an error can become extremely great upon reception of the data. To help prevent this, the above circuit is used. Demodulated signal is filtered by R809 and C820. The data signal is made square shape by data limitting AMP. RX Data is output from Pin 13 of IC801 and supplied to Pin 78 of IC901 via CN802, R928.

18.6. Initialization Circuit

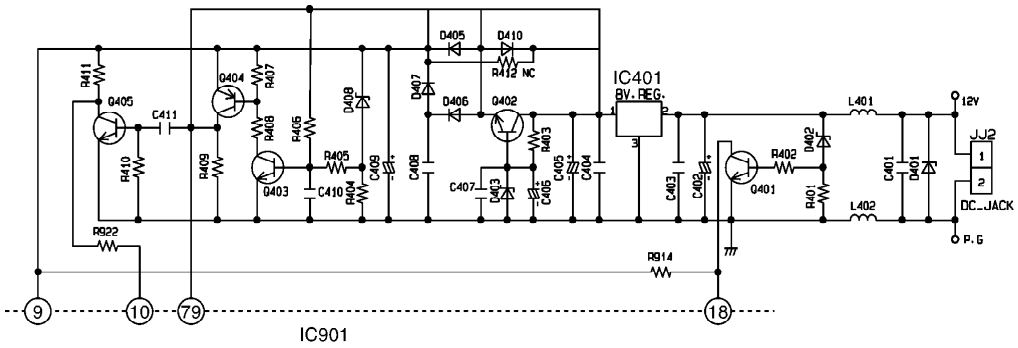
18.6.1. Function:

This circuit is used for initializing the CPU when the AC adaptor is connected.

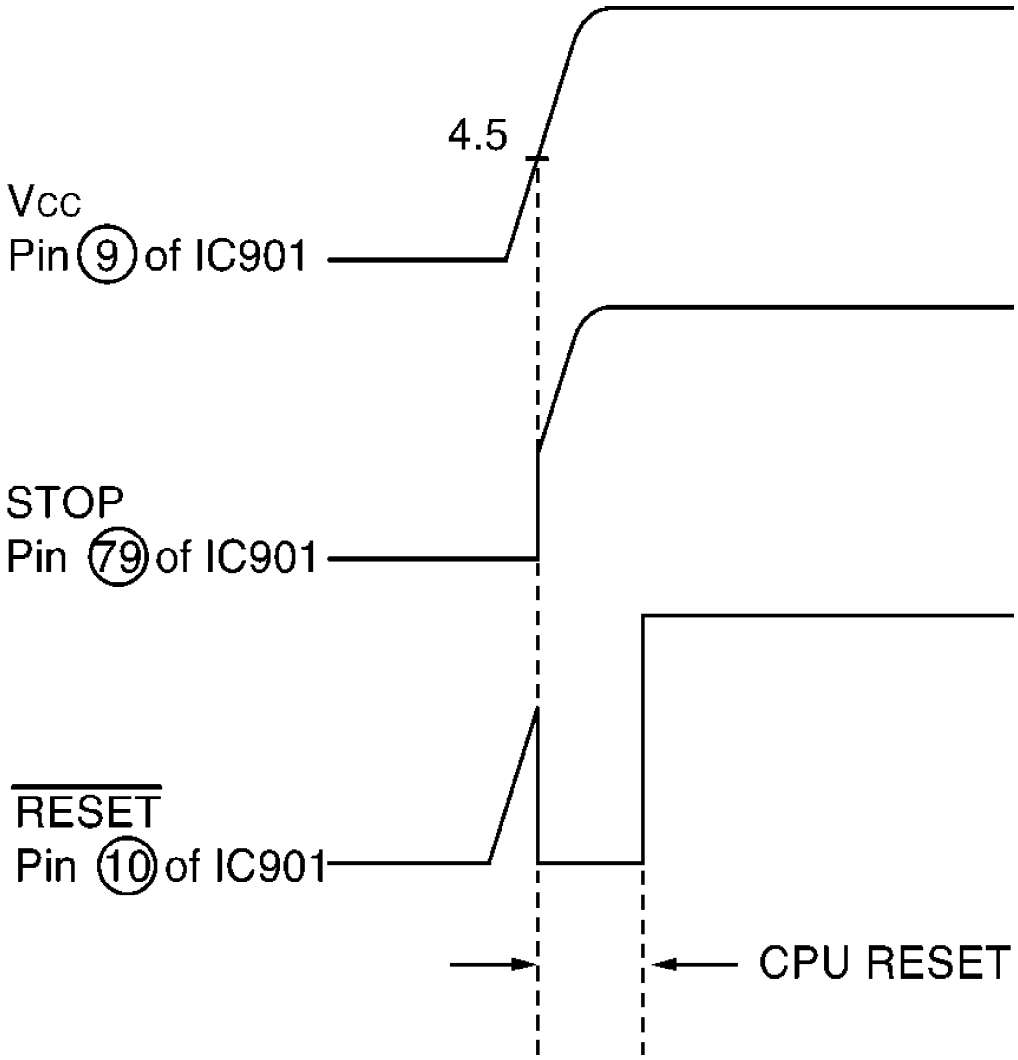
18.6.2. Circuit Operation:

When the unit is powered ON, the voltage is regulated to 8.0V in IC401 and power is supplied to Q402. Q402 regulate the voltage to 5.4V and power is supplied to the Pin 9 of IC901 (CPU) via D405. Q403 and Q404 are Reset transistors that are output Power Down signal. When input voltage is lower than 4.5V output voltage is Low level. If input voltage is higher than 4.5V output voltage is High level. The output voltage is supplied to Pin 79 of IC901. The output voltage from Q404 make reset pulse by reset circuit that is C411, R410, Q405, R411. The reset pulse is input to Pin 10 of IC901 via R922.

<Fig 107>



<Fig 108>



18.7. Calling Line Identification Circuit (Caller ID)

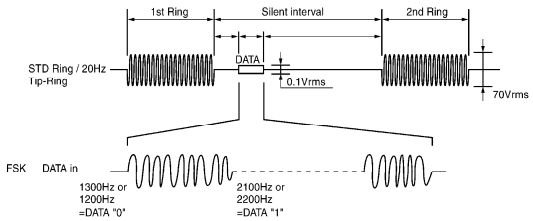
Function: / The caller ID is a chargeable ID which the user of a telephone circuit obtains by entering a contract with the telephone company to utilize a caller ID service. For this reason, the operation of this circuit assumes that a caller ID service contract has been entered for the circuit being used. / The data for the caller ID from the telephone exchange is sent during the interval between the first and second rings of the bell signal. The data from the telephone exchange is a modem signal which is modulated in an FSK (Frequency Shift Keying) format.

Data "0" is a 1200 Hz sine wave, and data “1” a 2200 Hz sine wave or, DTMF signal is used to Caller ID function. / There are two type of the message format which can be received: i.e. the single message format and plural message format. The plural message format allows to transmit the name and data code information in addition to the time and telephone number data.

18.7.1. FSK (Frequency Shift Keying)

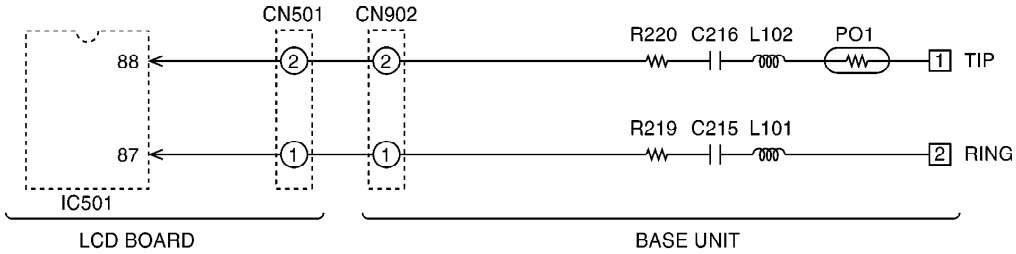
FSK is the method that sends the data "0" exchanging to the sine wave of 1200 Hz or 1300Hz and sends the data "1" exchanging to the sine wave of 1300Hz or 2100Hz. (The frequency is determined by the exchange.) / The FSK data is sent during the interval between the first and second rings of the bell signal. / The FSK method sends the telephone number of calling party, time, and also the name data according to the case.

<Fig 109>



FSK signal is coming through to PO1 → L102 → C216 → R220 and input to pin 88 of IC501. Opposite polarity FSK signal is coming through to L101 → C215 → R219 and input to pin 87 of IC501. IC501 demodulate the FSK signal, and memorize it into the memory inside of IC501, then display it on the LCD.

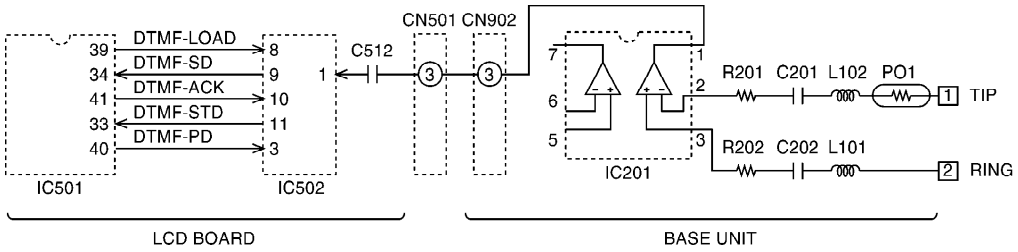
<Fig 110>



18.7.2. DTMF

It is the method to send the telephone number of calling party with DTMF to the telephone. DTMF is sent before the first bell signal. / The data is sent in turn; first the start code, secondly the telephone number of calling party, lastly end code. / The DTMF is chosen from A (1633Hz and 697Hz), B (1633Hz and 770Hz), C (1633Hz and 852Hz) and D (1633Hz and 941Hz) as the start code and end code according to the exchange.
DTMF signal is coming through to PO1 → L102 → C201 → R201 and input to pin 2 of IC201, and L101 → C202 → R202 and input to pin 3 of IC201.DTMF signal is input to pin 1 of IC502 from IC201 via C512, then IC502 demodulate the DTMF signal. The DATA is sent from pin 8, 9, 10, 11, 3 of IC502 to pin 39, 34, 41, 33, 40 of IC501 (CPU).

<Fig 111>



18.8. Power Supply Circuit

18.8.1. Function:

The power supply from the AC adaptor is supplied to each circuit through 8V regulator.

18.8.2. Circuit Operation:

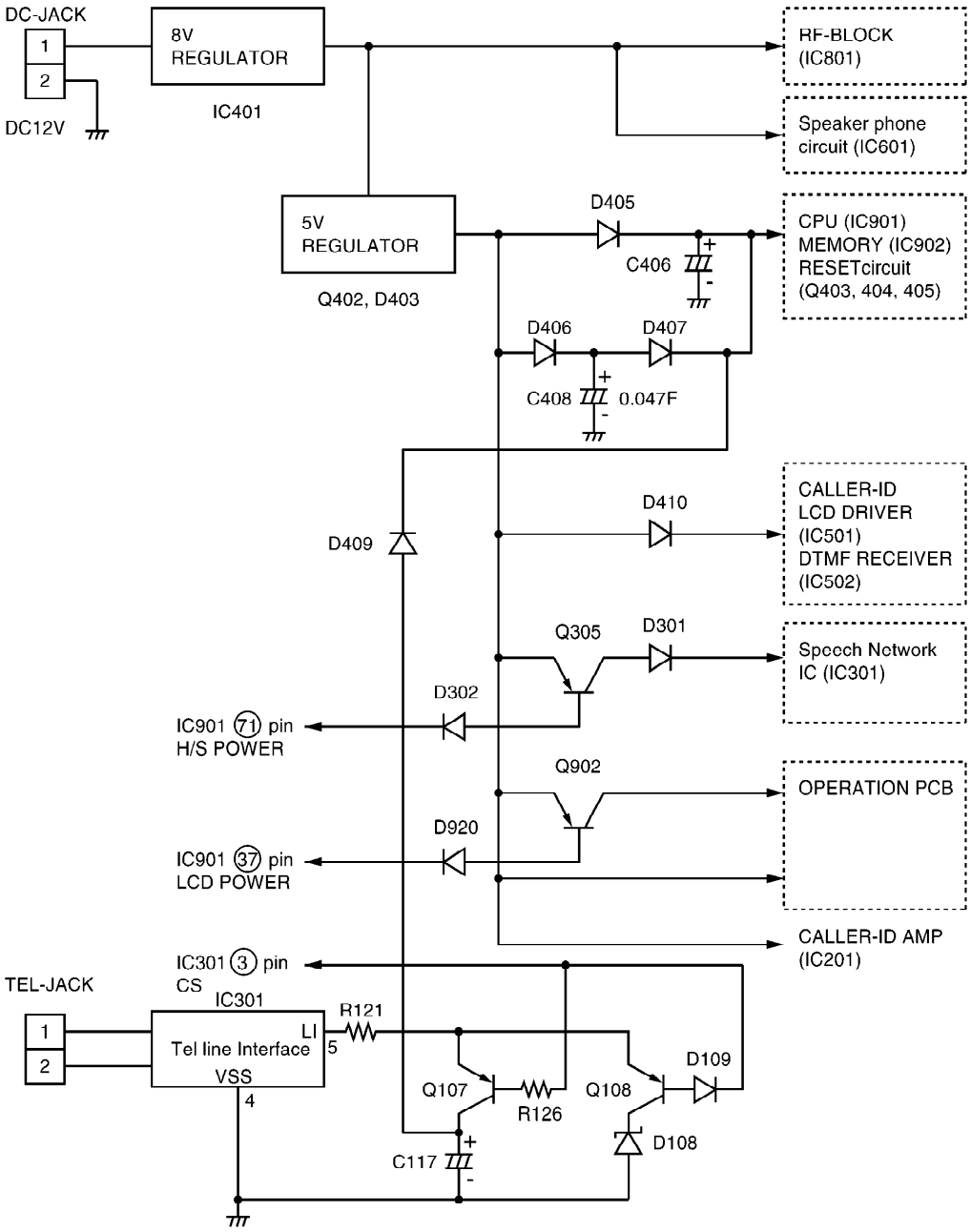
<The power supply from the AC adaptor>

As soon as IC301 is supplied with auxiliary power at the VDD-pin, the selected signal path of the speech circuit is switched on.

<At the power failure>

As soon as IC301 is supplied with line current,the external Vdd capacitor will be charged up via the LI-and VDD pin. After the Vdd voltage has reached the operating level of 2V, the line interface circuit and the selected signal path of the speech circuit is switched on. Also,the voltage of CPU is supplied from Q107 → D409.

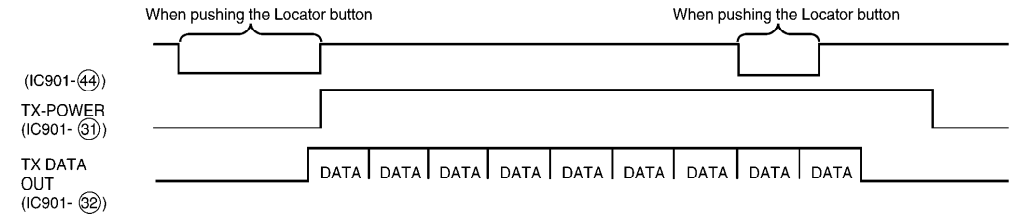
<Fig 112>



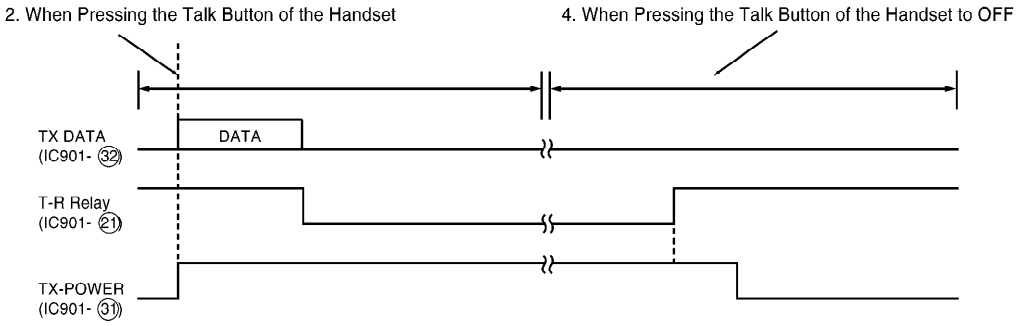
18.9. CPU Operation

<Fig 113>

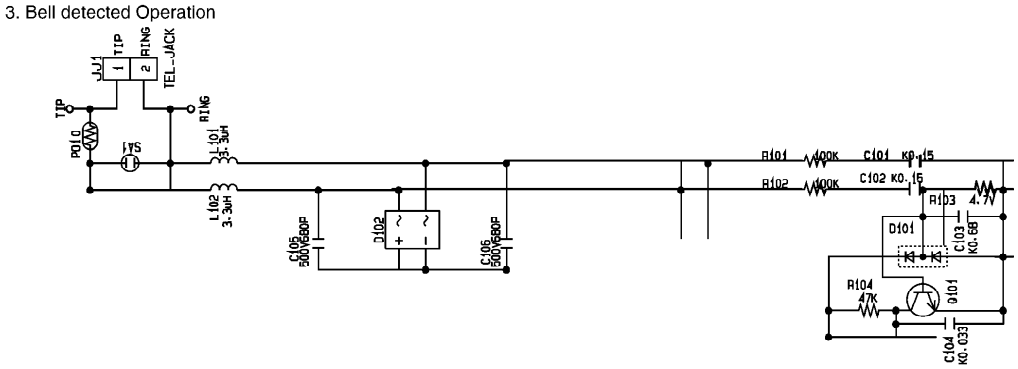
1. Timing of IC901 (CPU) Output Port with the Base Unit in Handset Locator Mode



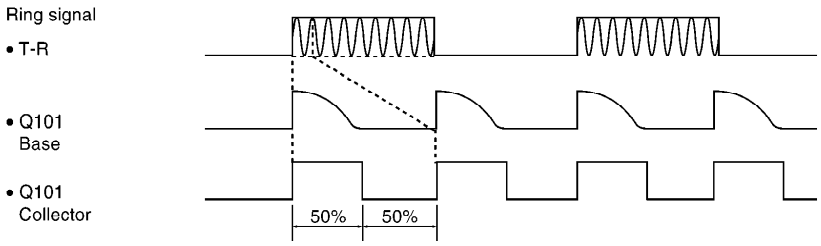
<Fig 114>



<Fig 115>



<Fig 116>

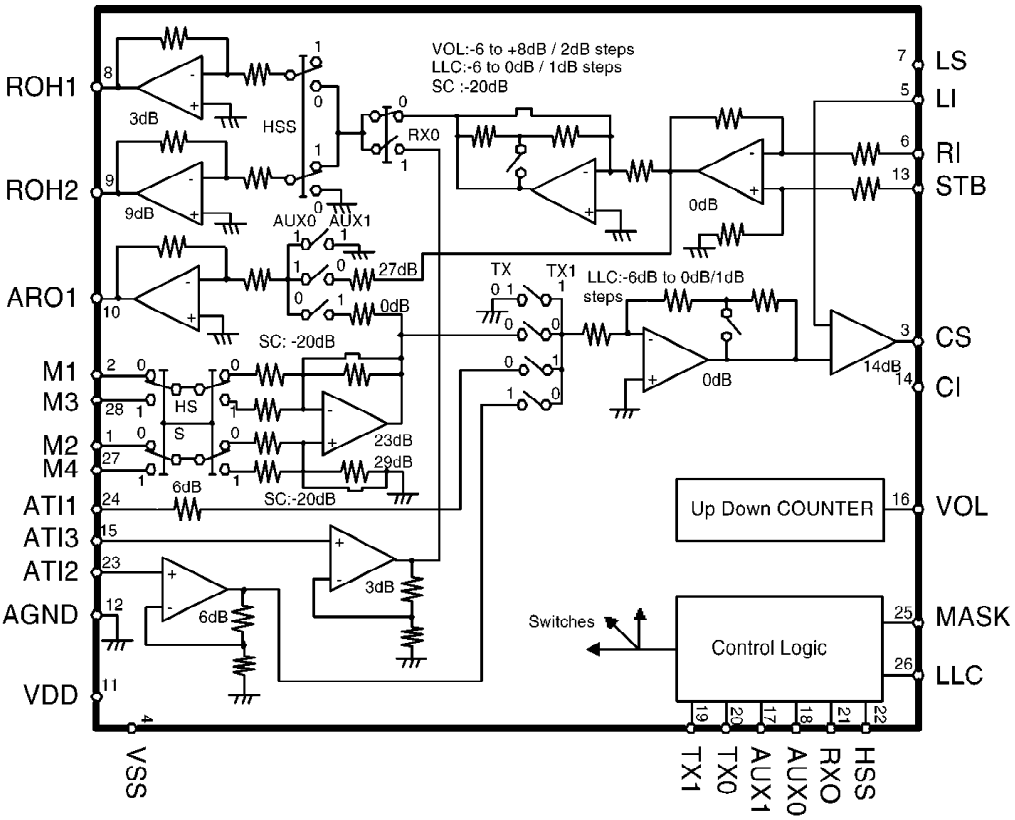


Make/break ratio when dialing with the Handset: 40%: 60% / High/low ratio upon ring signal: 50% : 50% / Therefore, if the low/high ratio is greater than 45% at IC901- 1 (CPU), it is judged as a ring signal.

18.10. Speech Network IC

Speech Network IC (IC301) changes the internal connections and makes the adequate route for voice-signal communications.

18.10.1. Internal Block Diagram and In/Out Port



18.10.2. Signal flow

On each operation mode, input and output ports of I C301 are shown below chart.

Operation Mode A		Operation Mode B	IC port No	IC port No
PORTABLE UNIT	↔	TEL LINE	(24) > (3)	(6) > (9)
SP-PHONE	↔	TEL LINE	(27)(28) -> (3)	(6) -> (9)
PORTABLE UNIT	↔	BASE UNIT	(15) -> (8)	(1)(2) -> (10)
HANDSET	↔	TEL LINE	(1)(2) -> (3)	(6) -> (8)

19. BLOCK DIAGRAM (PORTABLE UNIT)

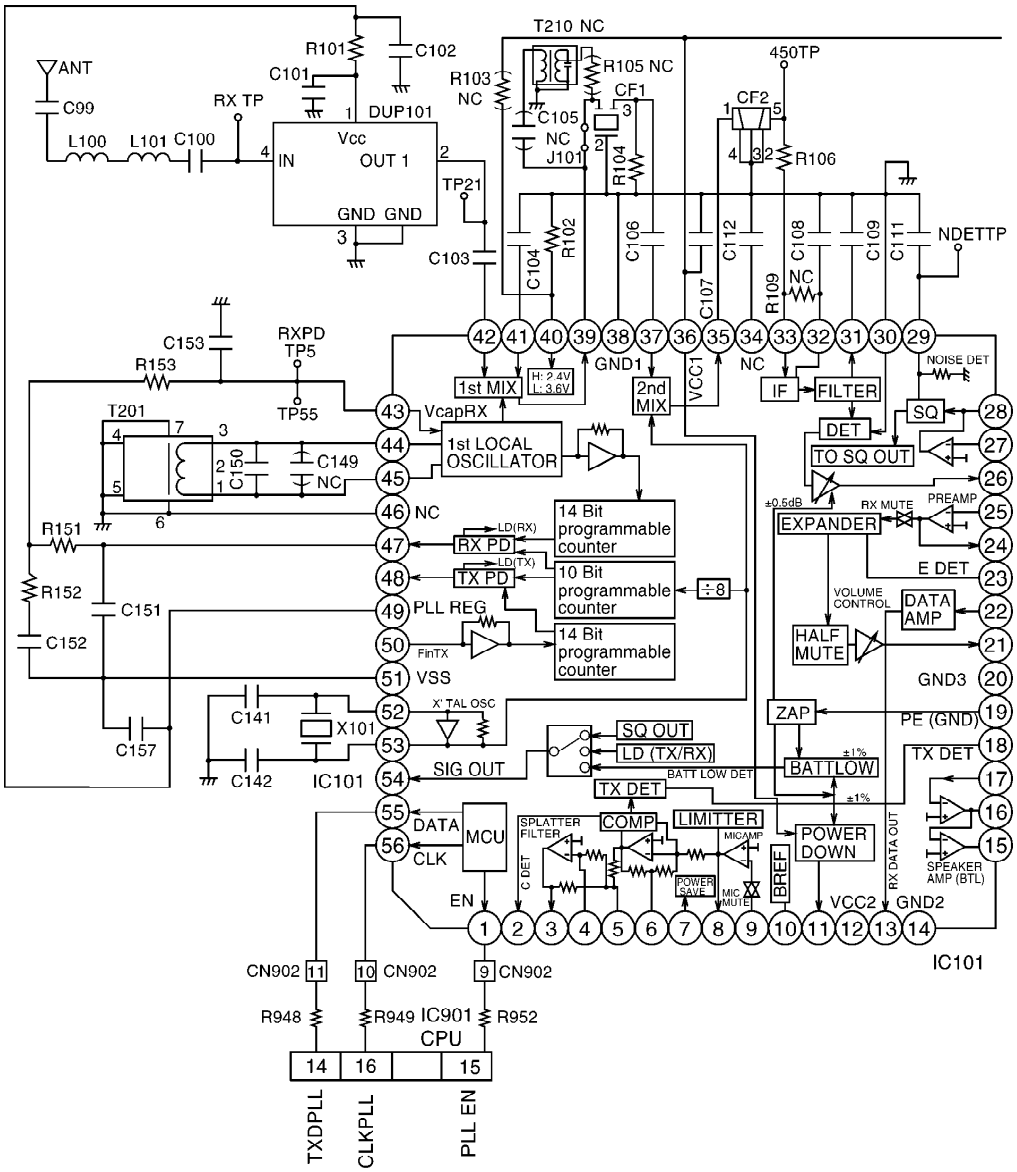
20. CIRCUIT OPERATION (PORTABLE UNIT)

20.1. Receiver RF IF Circuit

20.1.1. Circuit Operation:

The signal of 43 MHz band (43.72 MHz~44.20 MHz) is received at ANT is filtered by DUP101, and is input to Pin 42 of IC101. The RX VCO which oscillates at T201 and IC101 is locked to 1st Local frequency by PLL inside IC101. (PLL is controlled by serial data output from Pin 14 , 15 and 16 of IC901.) An input signal from Pin 42 of IC101 and 1st Local frequency output from RX VCO are mixed inside IC101, pass through CF1, and 1st IF frequency of 10.695 MHz is generated. Furthermore, 10.695 MHz signal and 10.240 MHz that oscillated at X101 and mixed by 2nd MIXER inside of IC101 and is filtered at CF2 and outputs 2nd IF 455 kHz.

<Fig 201>

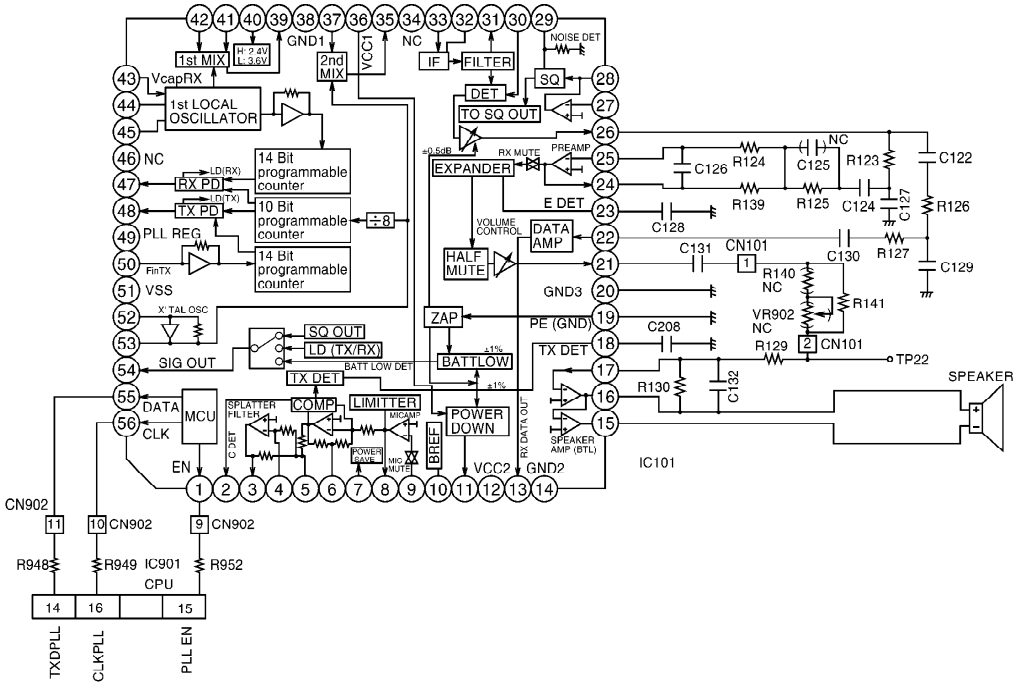


20.2. Receiver Signal Circuit

20.2.1. Circuit Operation:

After getting the 455kHz signal, it is input to Pin 33 of IC101 and passes through IF AMP and Detector Circuit, then AF signal are output from Pin 26. AF signal flows through R123, C124. Its level is controlled by the VOLUME CONTROL Amp of IC101. The signal is received at Pin 25 of IC101, then it passes through the following circuits: PREAMP, Expander and Amplifier: It goes out at Pin 16 and finally is sent to the SP. Inside IC101, RX-MUTE, MIC-MUTE and PLL circuits are controlled by the serial data that the CPU send from Pins 14 , 15 and 16.

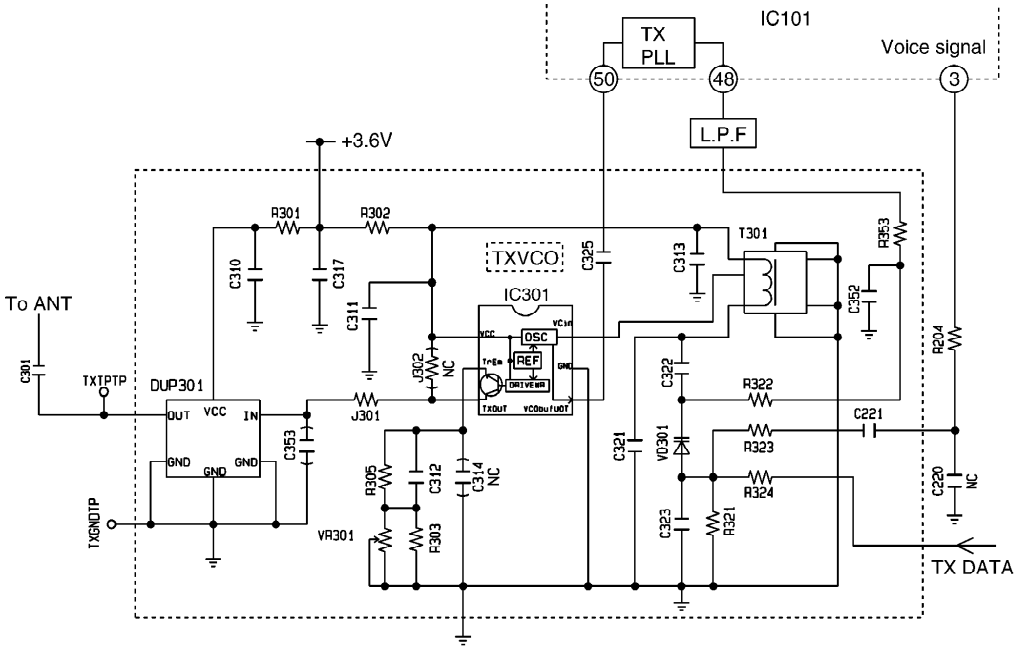
<Fig 202>



20.3. Transmitter Circuit

The voice signal or the data signal sent to the base unit is applied in the anode of the variable capacitor diode (VARICAP) VD301. The capacitance of VARICAP is changing in accordance with the Voice signal or Tx DATA signal. Therefore, the carrier frequency which is generated by IC301 and T301 will be changing, and Frequency modulated RF signal is generated. Then, amplified by IC301 - Amplifier part, pass through the duplexer, and radiated from Antenna.

<Fig 203>



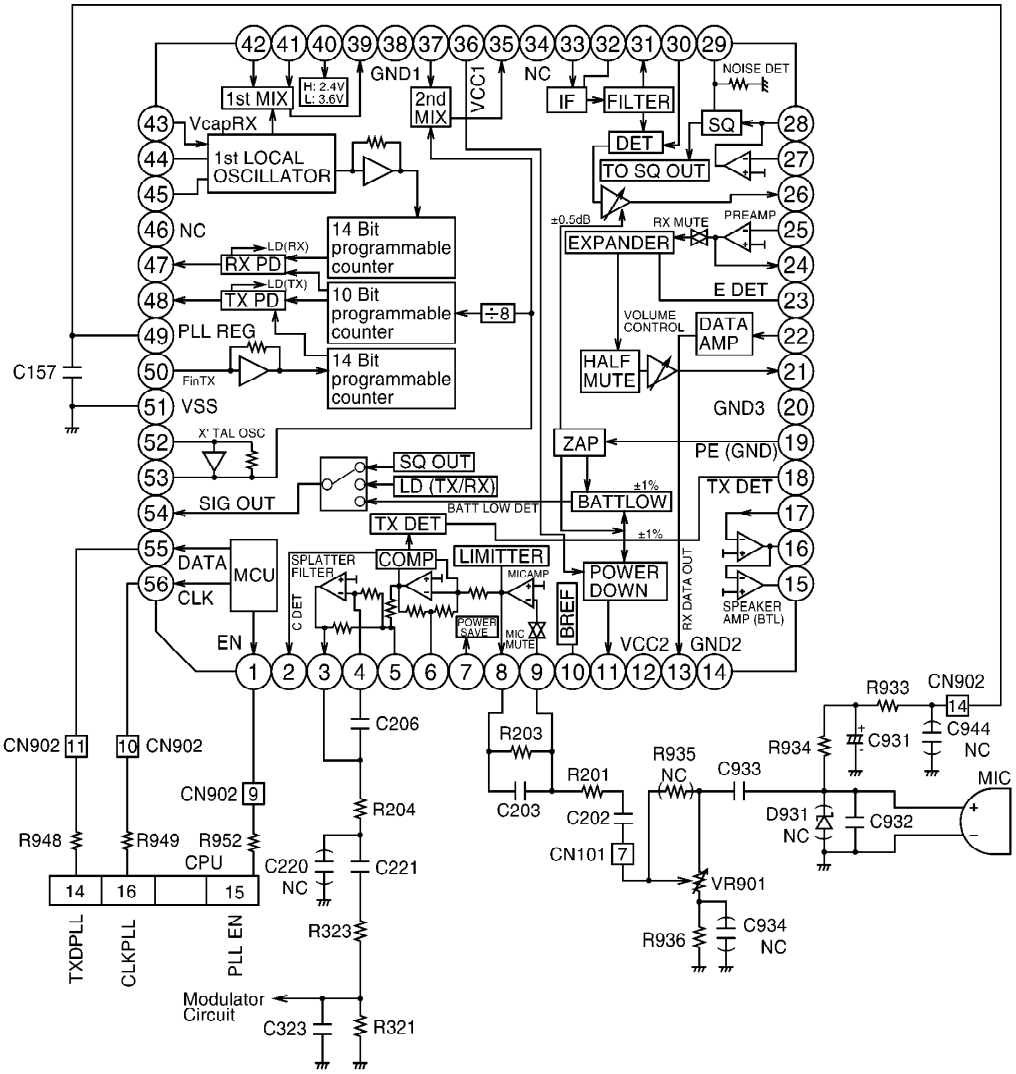
20.4. Transmitter Signal Circuit

20.4.1. Circuit Operation:

Input signal from MIC passes through the filters arranged by C202, R201 and C203, R203 and it

is input to the Pin 9 of IC101. Inside it, the signal passes through the MIC AMP and Compressor circuits and SPLATTER FILTER is output to Pin 3. It flows through R204, C221, R323, then is input to modulator circuit.

<Fig 204>

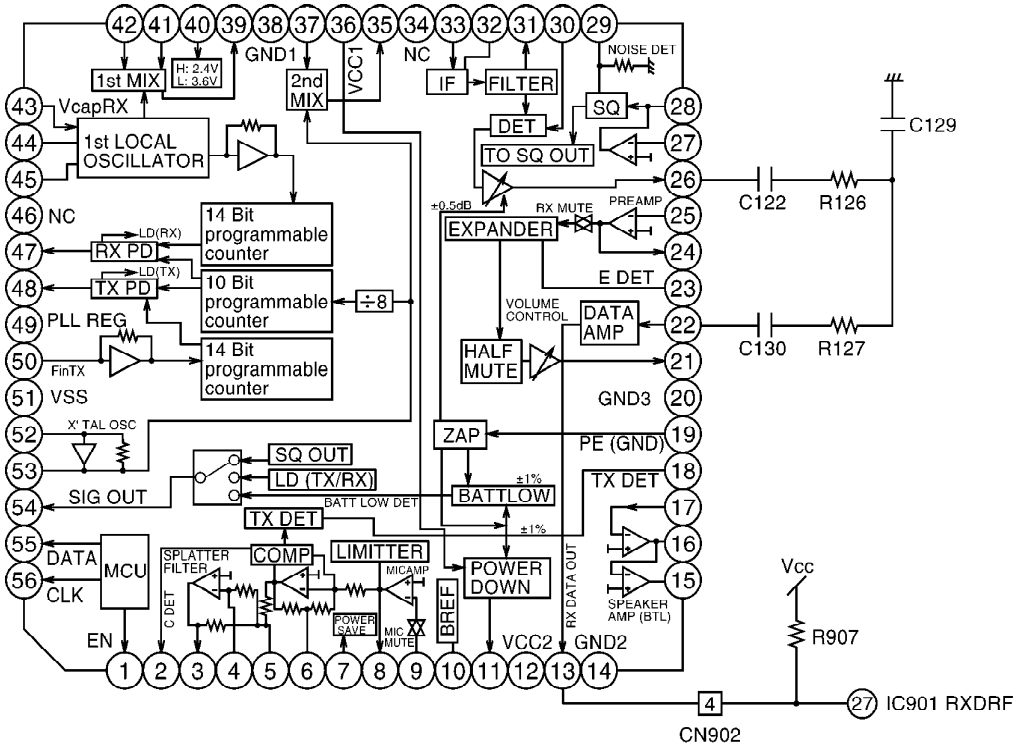


20.5. Receiver Data Circuit

20.5.1. Circuit Operation:

Only the data received are passed through the low pass filter formed by R126 and C129 to be input at pin 22 of IC101,where its wave form is adjusted. The resulting signal is output from Pin 13 and sent to CPU directly.

<Fig 205>

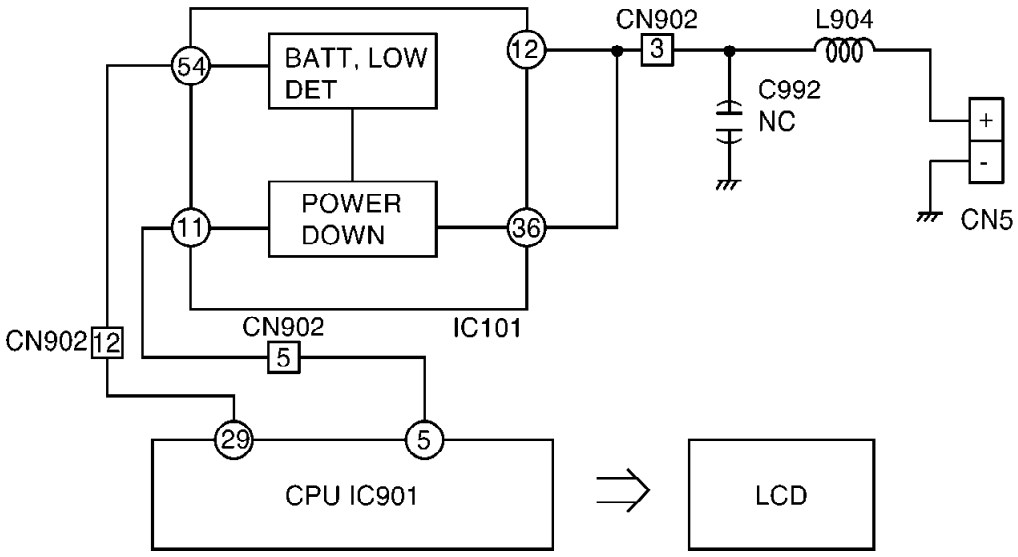


20.6. Battery Low Detector Circuit

20.6.1. Circuit Operation:

When the battery voltage goes down less than 3.57 V, this level is detected by the inside of IC101, so its output is sent to Pin 29 of IC901. The CPU detects this level by its Pin 29 and "" "Recharge battery" starts flashing. The IC101 check the level of the battery, if this level is less than 3.3 V, the output of Pin 11 of IC101 becomes low level, then CPU stops working to keep memory.

<Fig 206>



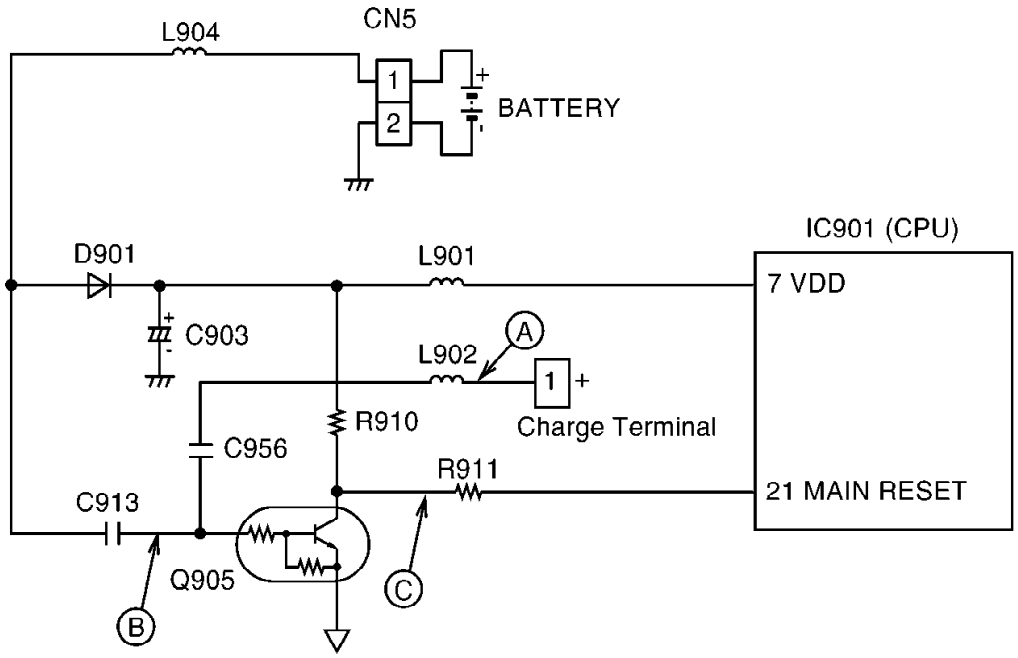
20.7. Reset Circuit Power ON/OFF Circuit

20.7.1. Reset Circuit

When the portable unit is charged, the impulse is sent through L902, C956, Q905 generates the reset signal and it is sent to Pin 21 of CPU via R911.

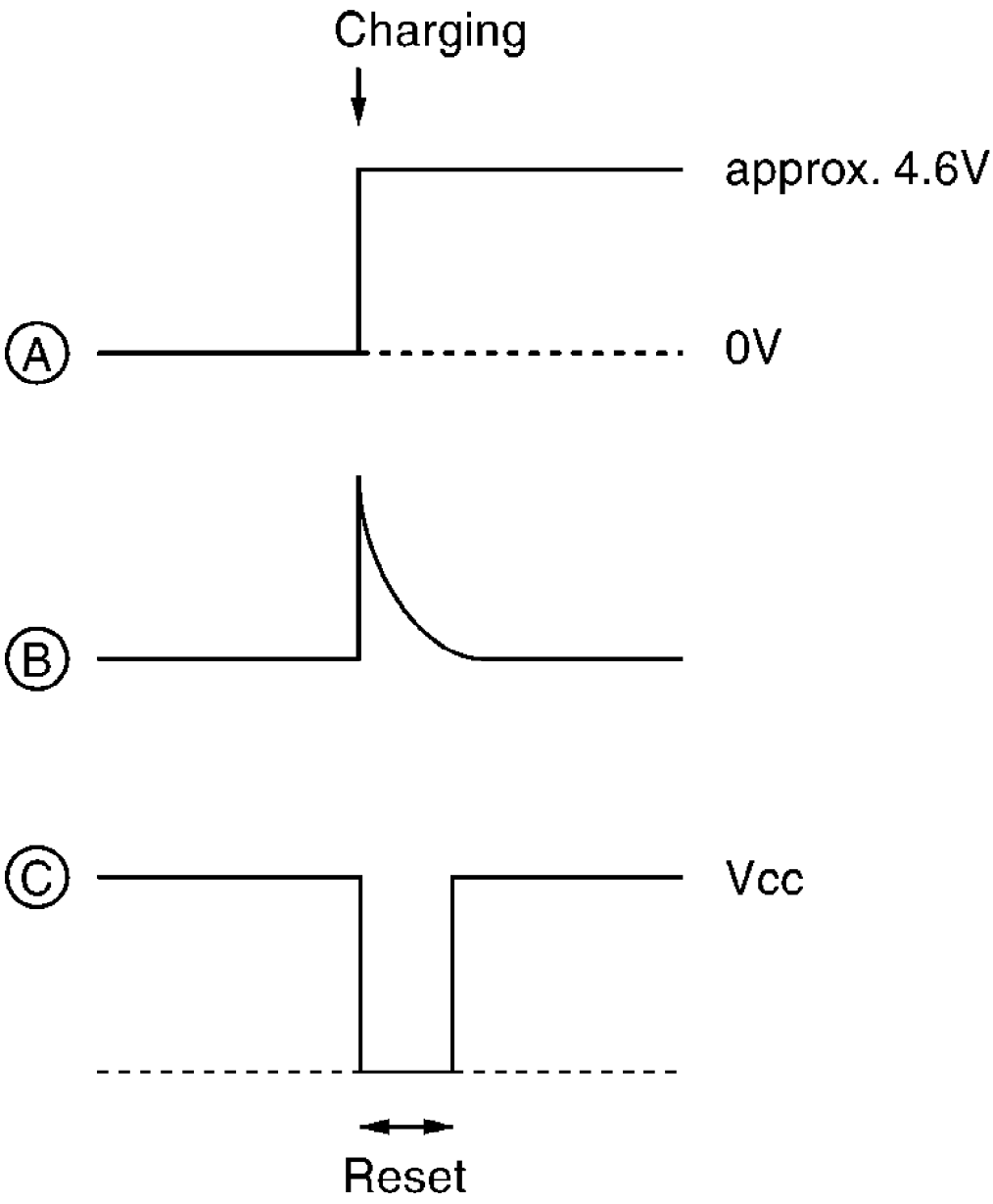
Circuit Diagram

<Fig 207>



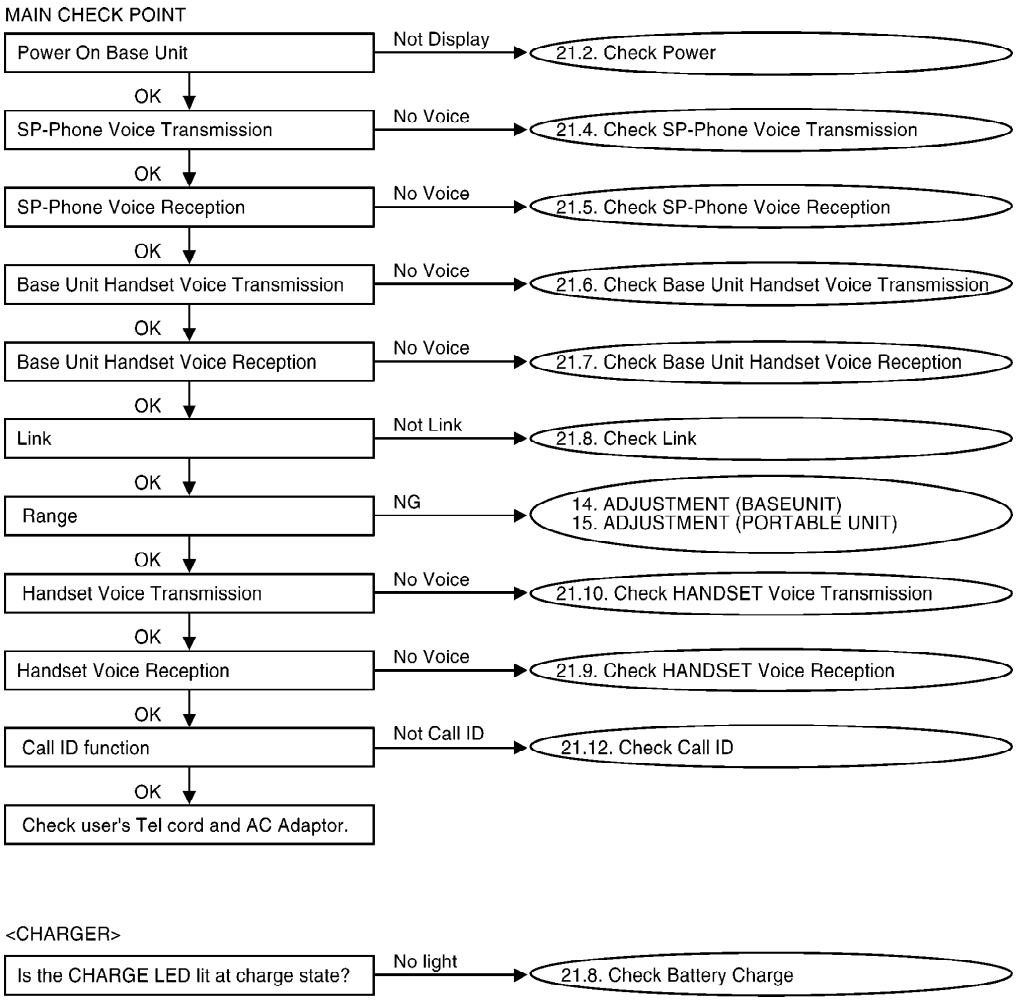
Timing Chart

<Fig 208>

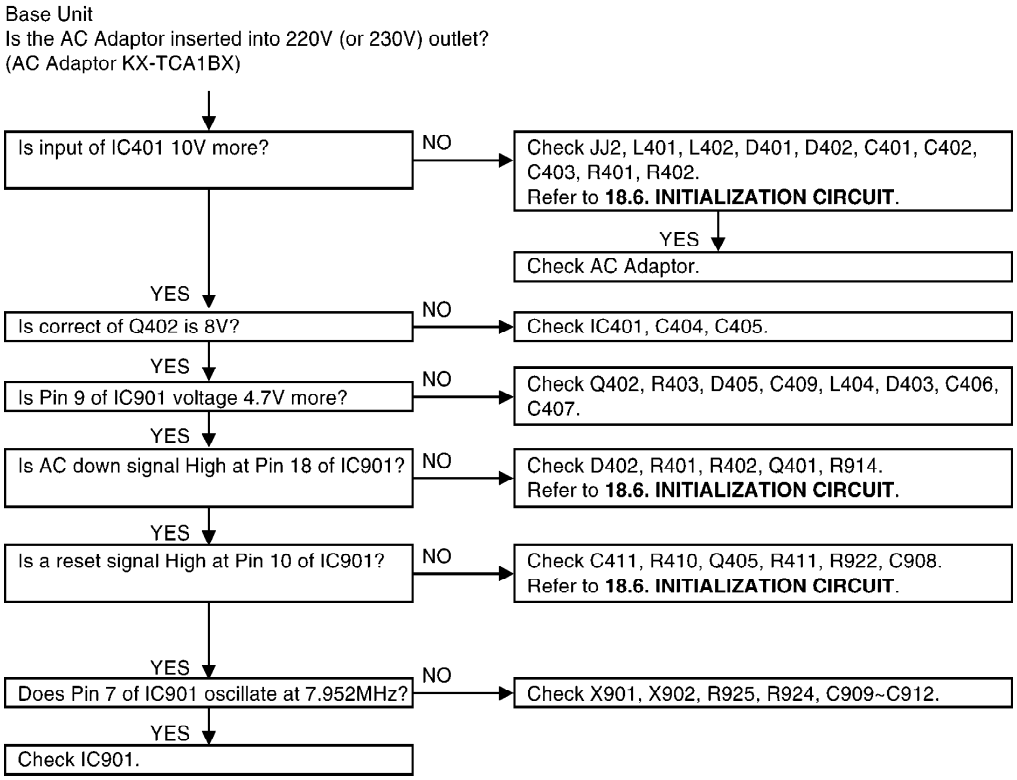


21. TROUBLESHOOTING GUIDE

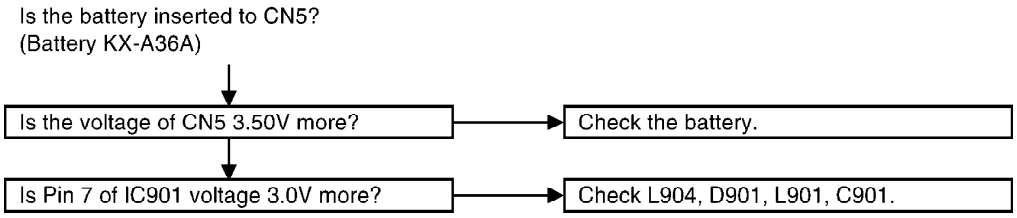
21.1. MAIN ROUTINE



21.2. Check Power

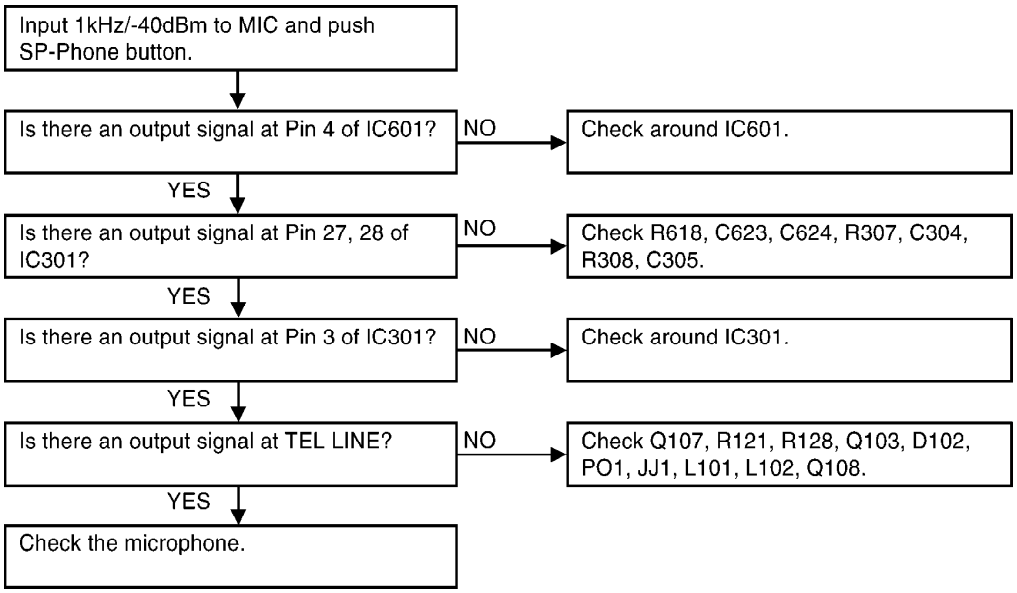

Base Unit
Is the AC Adaptor inserted into 220V (or 230V) outlet?
(AC Adaptor KX-TCA1BX)
Is input of IC401 10V more?
NO
Check JJ2, L401, L402, D401, D402, C401, C402, C403, R401, R402.
Refer to 18.6. INITIALIZATION CIRCUIT.
YES
Check AC Adaptor.
YES
Is correct of Q402 is 8V?
NO
Check IC401, C404, C405.
YES
Is Pin 9 of IC901 voltage 4.7V more?
NO
Check Q402, R403, D405, C409, L404, D403, C406, C407.
YES
Is AC down signal High at Pin 18 of IC901?
NO
Check D402, R401, R402, Q401, R914.
Refer to 18.6. INITIALIZATION CIRCUIT.
YES
Is a reset signal High at Pin 10 of IC901?
NO
Check C411, R410, Q405, R411, R922, C908.
Refer to 18.6. INITIALIZATION CIRCUIT.
YES
Does Pin 7 of IC901 oscillate at 7.952MHz?
NO
Check X901, X902, R925, R924, C909~C912.
YES
Check IC901.

21.3. Portable Unit


Is the battery inserted to CN5?
(Battery KX-A36A)
Is the voltage of CN5 3.50V more?
Check the battery.
Is Pin 7 of IC901 voltage 3.0V more?
Check L904, D901, L901, C901.

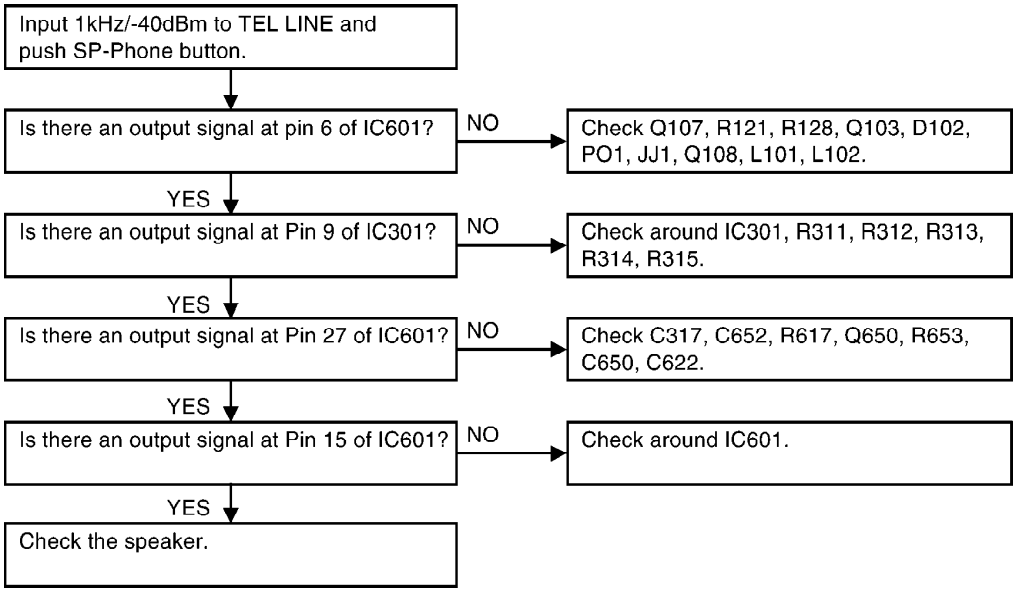
21.4. Check SP-Phone Voice Transmission

Base Unit


Input 1kHz/-40dBm to MIC and push SP-Phone button.
Is there an output signal at Pin 4 of IC601?
NO
Check around IC601.
YES
Is there an output signal at Pin 27, 28 of IC301?
NO
Check R618, C623, C624, R307, C304, R308, C305.
YES
Is there an output signal at Pin 3 of IC301?
NO
Check around IC301.
YES
Is there an output signal at TEL LINE?
NO
Check Q107, R121, R128, Q103, D102, PO1, JJ1, L101, L102, Q108.
YES
Check the microphone.

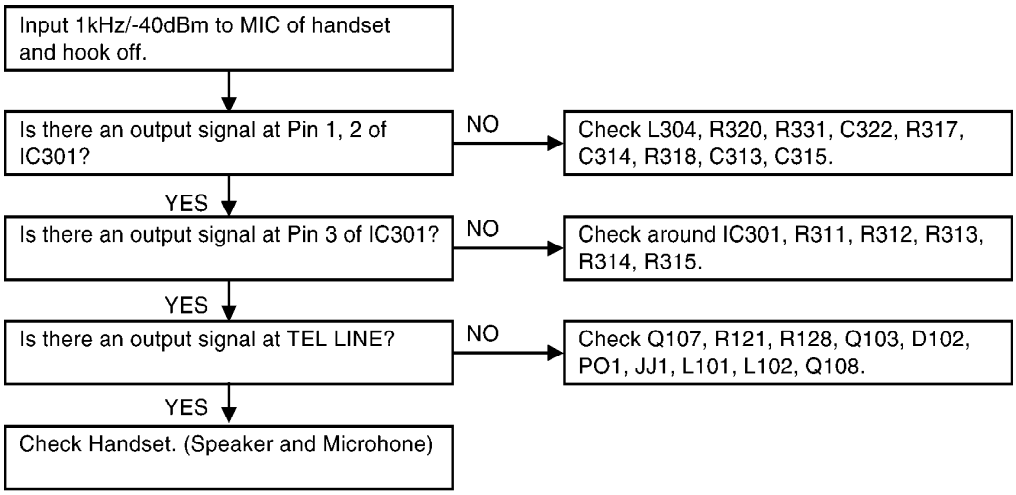
21.5. Check SP-Phone Voice Reception

Base Unit


Input 1kHz/-40dBm to TEL LINE and push SP-Phone button.
Is there an output signal at pin 6 of IC601?
NO
Check Q107, R121, R128, Q103, D102, PO1, JJ1, Q108, L101, L102.
YES
Is there an output signal at Pin 9 of IC301?
NO
Check around IC301, R311, R312, R313, R314, R315.
YES
Is there an output signal at Pin 27 of IC601?
NO
Check C317, C652, R617, Q650, R653, C650, C622.
YES
Is there an output signal at Pin 15 of IC601?
NO
Check around IC601.
YES
Check the speaker.

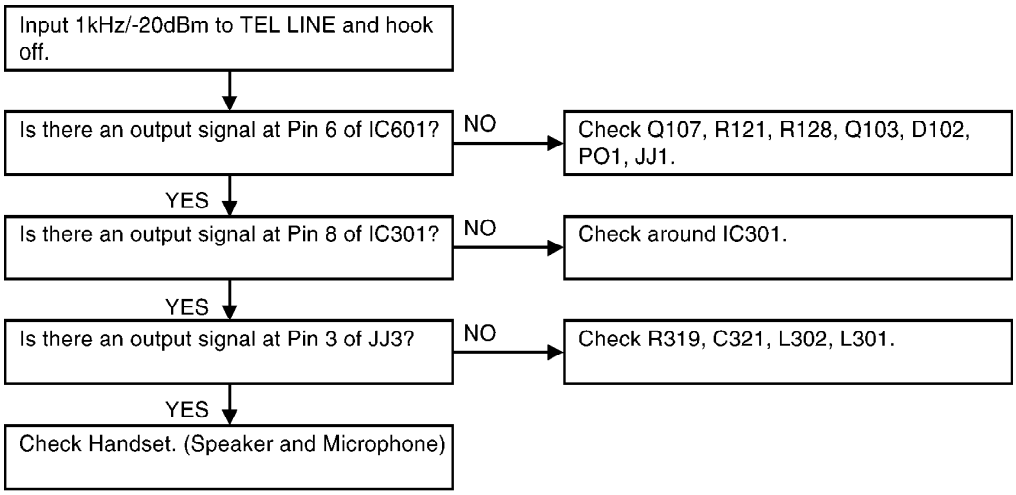
21.6. Check Base Unit Handset Voice Transmission

Base Unit


Input 1kHz/-40dBm to MIC of handset and hook off.
Is there an output signal at Pin 1, 2 of IC301?
NO
Check L304, R320, R331, C322, R317, C314, R318, C313, C315.
YES
Is there an output signal at Pin 3 of IC301?
NO
Check around IC301, R311, R312, R313, R314, R315.
YES
Is there an output signal at TEL LINE?
NO
Check Q107, R121, R128, Q103, D102, PO1, JJ1, L101, L102, Q108.
YES
Check Handset. (Speaker and Microhone)

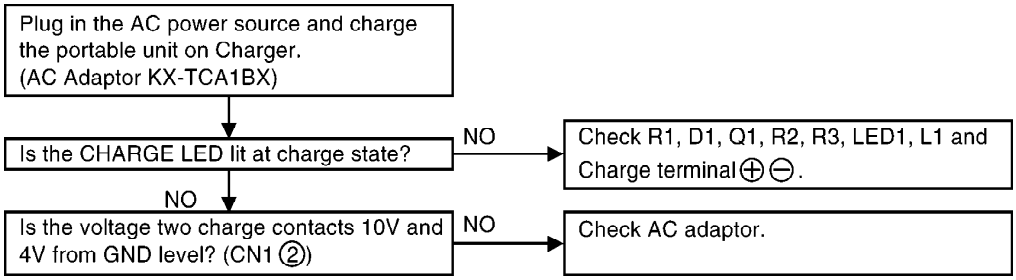
21.7. Check Base Unit Handset Voice Reception.

Base Unit

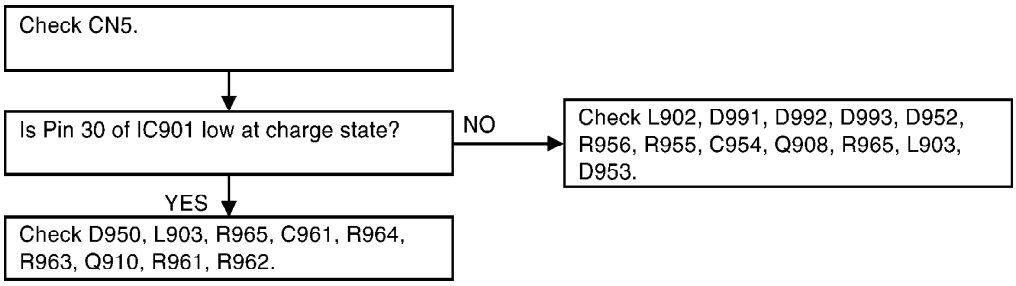

Input 1kHz/-20dBm to TEL LINE and hook off.
Is there an output signal at Pin 6 of IC601?
NO
Check Q107, R121, R128, Q103, D102, PO1, JJ1.
YES
Is there an output signal at Pin 8 of IC301?
NO
Check around IC301.
YES
Is there an output signal at Pin 3 of JJ3?
NO
Check R319, C321, L302, L301.
YES
Check Handset. (Speaker and Microphone)

21.8. Check Battery Charge

Charger

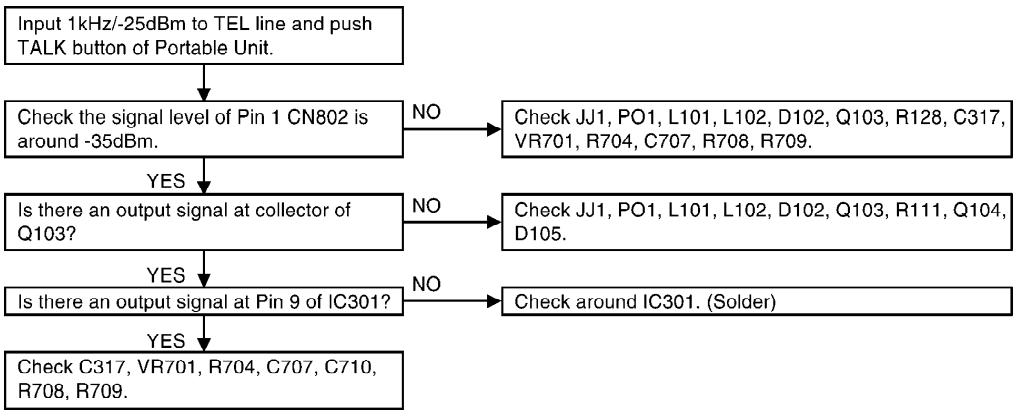

Plug in the AC power source and charge the portable unit on Charger.
(AC Adaptor KX-TCA1BX)
Is the CHARGE LED lit at charge state?
NO
Check R1, D1, Q1, R2, R3, LED1, L1 and Charge terminal ⊕⊖.
NO
Is the voltage two charge contacts 10V and 4V from GND level? (CN1 ②)
NO
Check AC adaptor.

Portable Unit

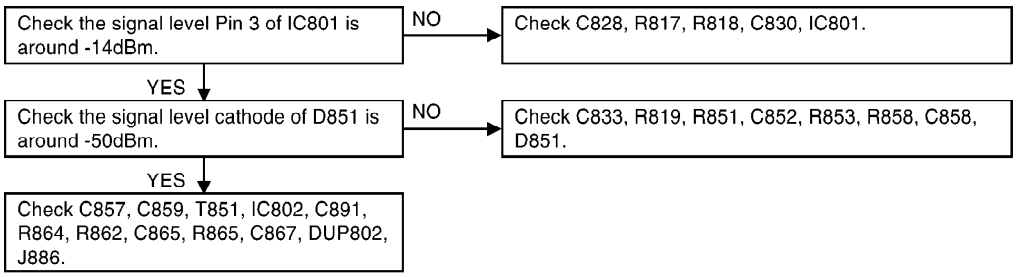


21.9. Check Voice Reception

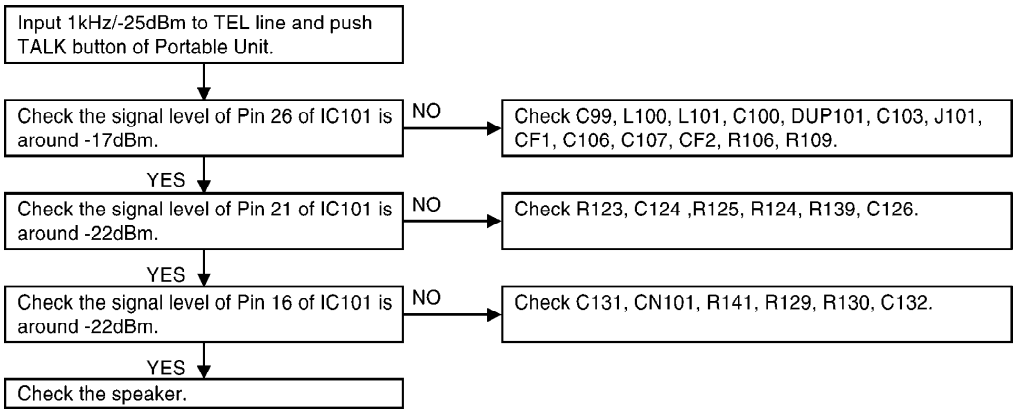
Base Unit


Input 1kHz/-25dBm to TEL line and push TALK button of Portable Unit.
Check the signal level of Pin 1 CN802 is around -35dBm.
NO
Check JJ1, PO1, L101, L102, D102, Q103, R128, C317, VR701, R704, C707, R708, R709.
YES
Is there an output signal at collector of Q103?
NO
Check JJ1, PO1, L101, L102, D102, Q103, R111, Q104, D105.
YES
Is there an output signal at Pin 9 of IC301?
NO
Check around IC301. (Solder)
YES
Check C317, VR701, R704, C707, C710, R708, R709.

Base Unit RF section

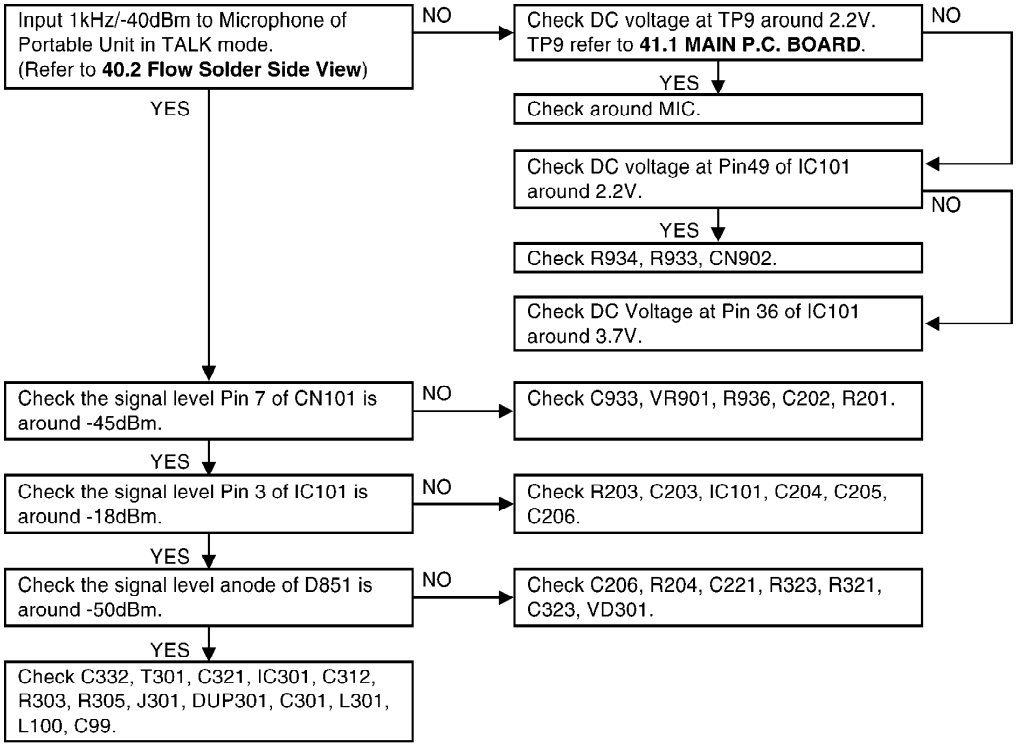

Check the signal level Pin 3 of IC801 is around -14dBm.
NO
Check C828, R817, R818, C830, IC801.
YES
Check the signal level cathode of D851 is around -50dBm.
NO
Check C833, R819, R851, C852, R853, R858, C858, D851.
YES
Check C857, C859, T851, IC802, C891, R864, R862, C865, R865, C867, DUP802, J886.

Portable Unit

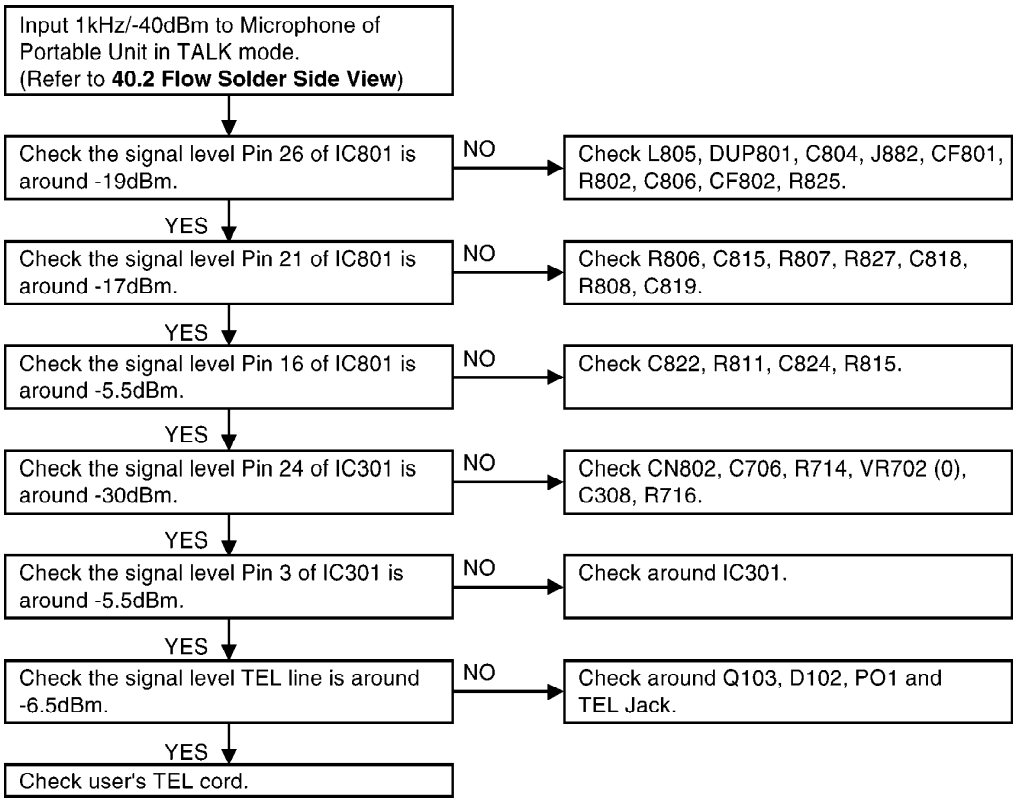

Input 1kHz/-25dBm to TEL line and push TALK button of Portable Unit.
Check the signal level of Pin 26 of IC101 is around -17dBm.
NO
Check C99, L100, L101, C100, DUP101, C103, J101, CF1, C106, C107, CF2, R106, R109.
YES
Check the signal level of Pin 21 of IC101 is around -22dBm.
NO
Check R123, C124 ,R125, R124, R139, C126.
YES
Check the signal level of Pin 16 of IC101 is around -22dBm.
NO
Check C131, CN101, R141, R129, R130, C132.
YES
Check the speaker.

21.10. Check Voice Transmission

Portable Unit

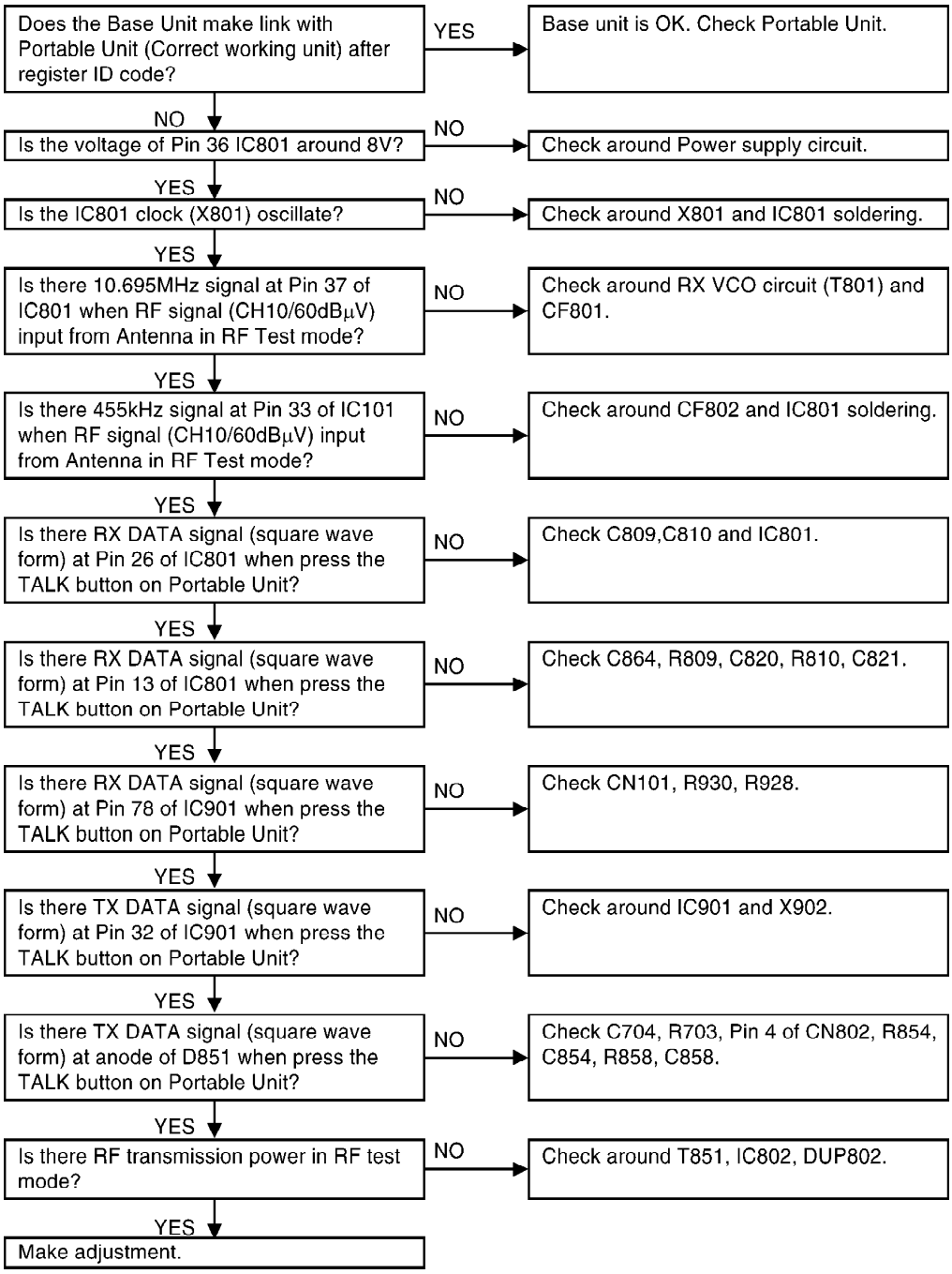

Input 1kHz/-40dBm to Microphone of Portable Unit in TALK mode. (Refer to **40.2 Flow Solder Side View**)
NO
Check DC voltage at TP9 around 2.2V. TP9 refer to **41.1 MAIN P.C. BOARD**.
NO
YES
Check around MIC.
Check DC voltage at Pin49 of IC101 around 2.2V.
NO
YES
Check R934, R933, CN902.
Check DC Voltage at Pin 36 of IC101 around 3.7V.
YES
Check the signal level Pin 7 of CN101 is around -45dBm.
NO
Check C933, VR901, R936, C202, R201.
YES
Check the signal level Pin 3 of IC101 is around -18dBm.
NO
Check R203, C203, IC101, C204, C205, C206.
YES
Check the signal level anode of D851 is around -50dBm.
NO
Check C206, R204, C221, R323, R321, C323, VD301.
YES
Check C332, T301, C321, IC301, C312, R303, R305, J301, DUP301, C301, L301, L100, C99.

Base Unit

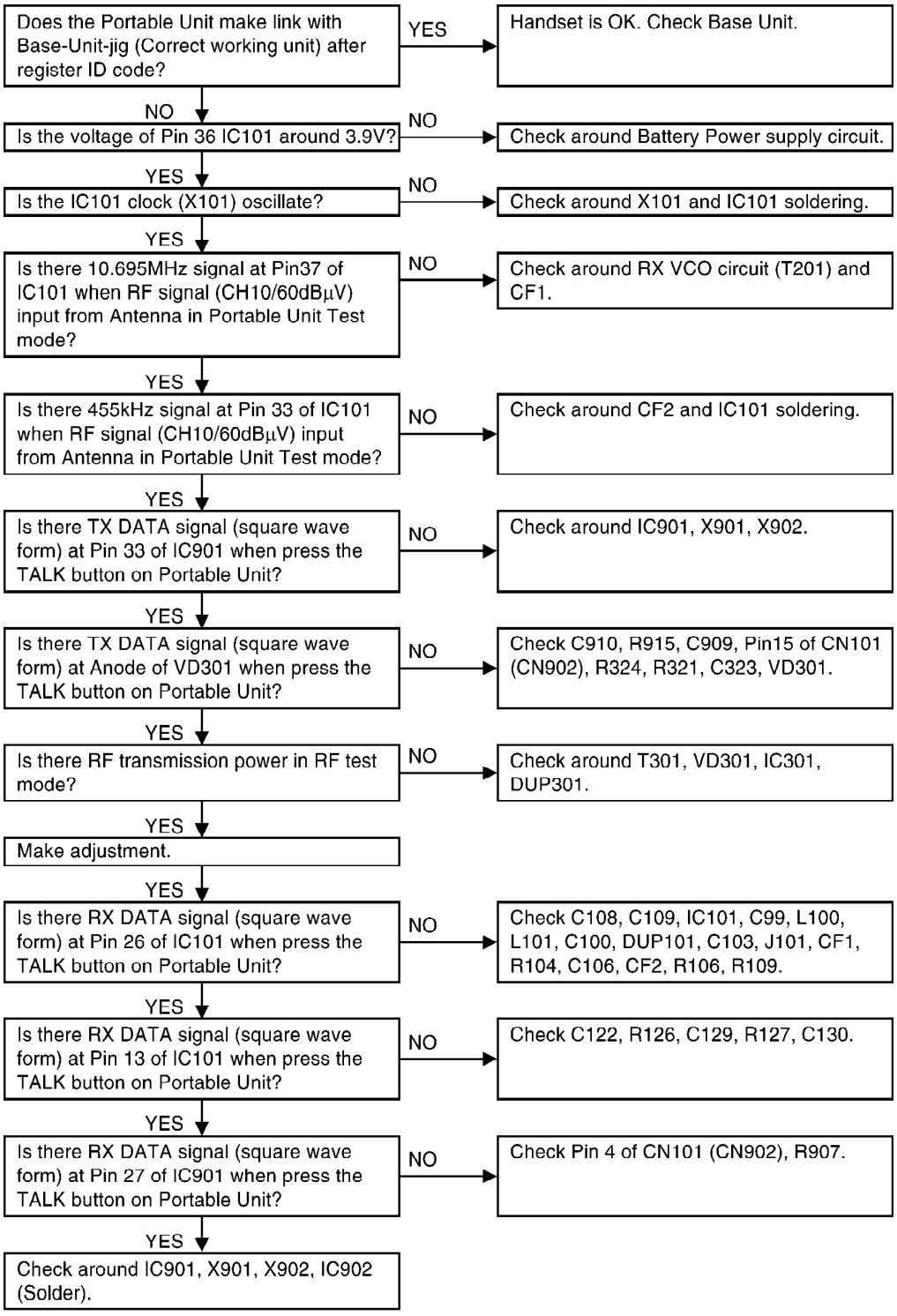

Input 1kHz/-40dBm to Microphone of Portable Unit in TALK mode. (Refer to **40.2 Flow Solder Side View**)
Check the signal level Pin 26 of IC801 is around -19dBm.
NO
Check L805, DUP801, C804, J882, CF801, R802, C806, CF802, R825.
YES
Check the signal level Pin 21 of IC801 is around -17dBm.
NO
Check R806, C815, R807, R827, C818, R808, C819.
YES
Check the signal level Pin 16 of IC801 is around -5.5dBm.
NO
Check C822, R811, C824, R815.
YES
Check the signal level Pin 24 of IC301 is around -30dBm.
NO
Check CN802, C706, R714, VR702 (0), C308, R716.
YES
Check the signal level Pin 3 of IC301 is around -5.5dBm.
NO
Check around IC301.
YES
Check the signal level TEL line is around -6.5dBm.
NO
Check around Q103, D102, PO1 and TEL Jack.
YES
Check user's TEL cord.

21.11. Check Link

Base Unit

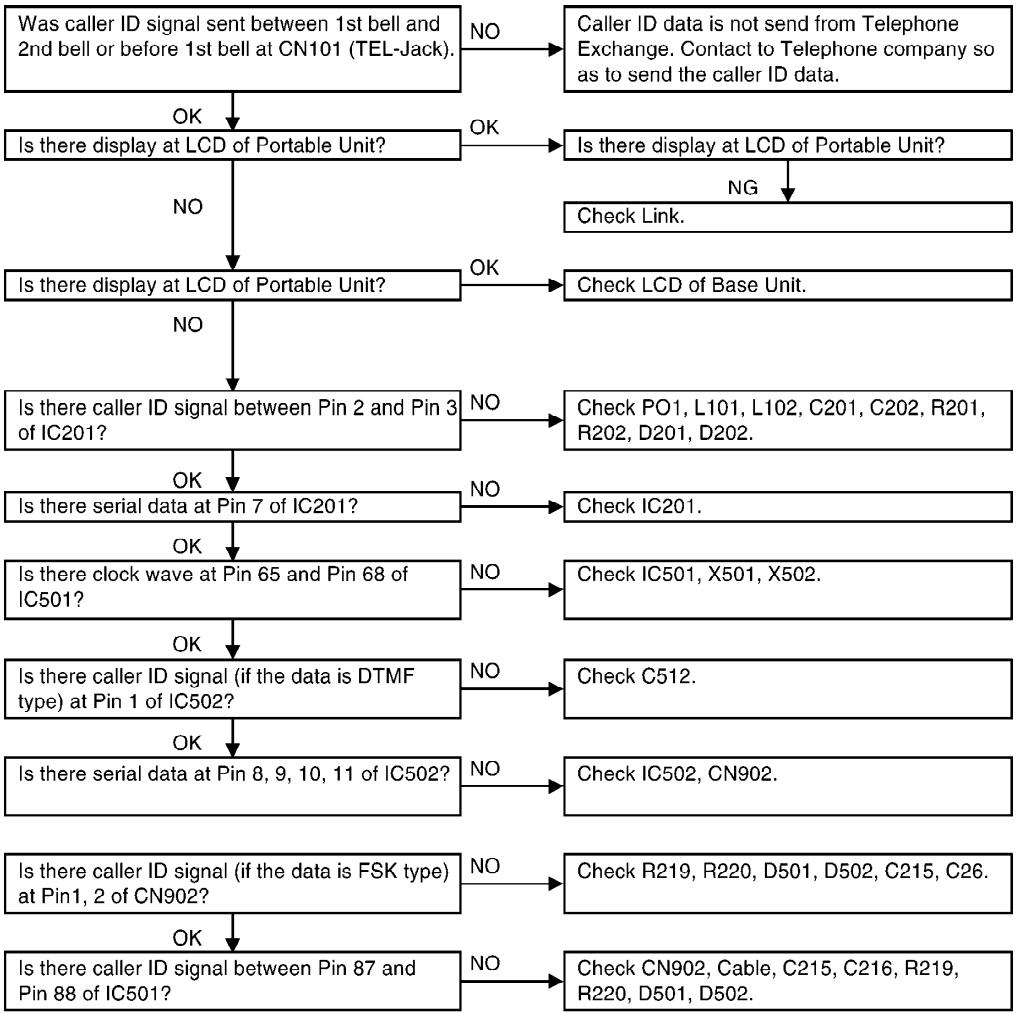

Does the Base Unit make link with Portable Unit (Correct working unit) after register ID code?
YES
Base unit is OK. Check Portable Unit.
NO
Is the voltage of Pin 36 IC801 around 8V?
NO
Check around Power supply circuit.
YES
Is the IC801 clock (X801) oscillate?
NO
Check around X801 and IC801 soldering.
YES
Is there 10.695MHz signal at Pin 37 of IC801 when RF signal (CH10/60dBμV) input from Antenna in RF Test mode?
NO
Check around RX VCO circuit (T801) and CF801.
YES
Is there 455kHz signal at Pin 33 of IC101 when RF signal (CH10/60dBμV) input from Antenna in RF Test mode?
NO
Check around CF802 and IC801 soldering.
YES
Is there RX DATA signal (square wave form) at Pin 26 of IC801 when press the TALK button on Portable Unit?
NO
Check C809,C810 and IC801.
YES
Is there RX DATA signal (square wave form) at Pin 13 of IC801 when press the TALK button on Portable Unit?
NO
Check C864, R809, C820, R810, C821.
YES
Is there RX DATA signal (square wave form) at Pin 78 of IC901 when press the TALK button on Portable Unit?
NO
Check CN101, R930, R928.
YES
Is there TX DATA signal (square wave form) at Pin 32 of IC901 when press the TALK button on Portable Unit?
NO
Check around IC901 and X902.
YES
Is there TX DATA signal (square wave form) at anode of D851 when press the TALK button on Portable Unit?
NO
Check C704, R703, Pin 4 of CN802, R854, C854, R858, C858.
YES
Is there RF transmission power in RF test mode?
NO
Check around T851, IC802, DUP802.
YES
Make adjustment.

Portable Unit


Does the Portable Unit make link with Base-Unit-jig (Correct working unit) after register ID code?
YES
Handset is OK. Check Base Unit.
NO
Is the voltage of Pin 36 IC101 around 3.9V?
NO
Check around Battery Power supply circuit.
YES
Is the IC101 clock (X101) oscillate?
NO
Check around X101 and IC101 soldering.
YES
Is there 10.695MHz signal at Pin37 of IC101 when RF signal (CH10/60dBμV) input from Antenna in Portable Unit Test mode?
NO
Check around RX VCO circuit (T201) and CF1.
YES
Is there 455kHz signal at Pin 33 of IC101 when RF signal (CH10/60dBμV) input from Antenna in Portable Unit Test mode?
NO
Check around CF2 and IC101 soldering.
YES
Is there TX DATA signal (square wave form) at Pin 33 of IC901 when press the TALK button on Portable Unit?
NO
Check around IC901, X901, X902.
YES
Is there TX DATA signal (square wave form) at Anode of VD301 when press the TALK button on Portable Unit?
NO
Check C910, R915, C909, Pin15 of CN101 (CN902), R324, R321, C323, VD301.
YES
Is there RF transmission power in RF test mode?
NO
Check around T301, VD301, IC301, DUP301.
YES
Make adjustment.
YES
Is there RX DATA signal (square wave form) at Pin 26 of IC101 when press the TALK button on Portable Unit?
NO
Check C108, C109, IC101, C99, L100, L101, C100, DUP101, C103, J101, CF1, R104, C106, CF2, R106, R109.
YES
Is there RX DATA signal (square wave form) at Pin 13 of IC101 when press the TALK button on Portable Unit?
NO
Check C122, R126, C129, R127, C130.
YES
Is there RX DATA signal (square wave form) at Pin 27 of IC901 when press the TALK button on Portable Unit?
NO
Check Pin 4 of CN101 (CN902), R907.
YES
Check around IC901, X901, X902, IC902 (Solder).

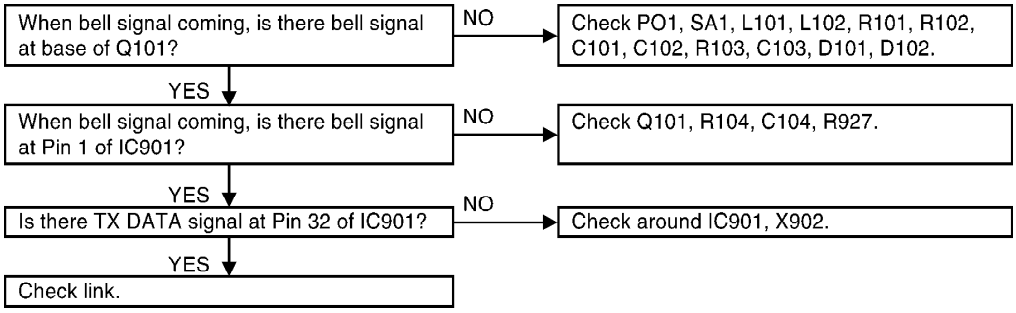
21.12. Check Call ID

Base Unit

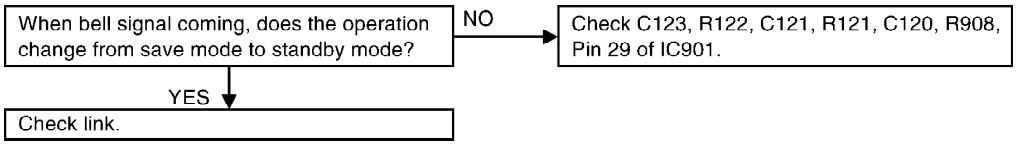

Was caller ID signal sent between 1st bell and 2nd bell or before 1st bell at CN101 (TEL-Jack).
NO
Caller ID data is not send from Telephone Exchange. Contact to Telephone company so as to send the caller ID data.
OK
Is there display at LCD of Portable Unit?
OK
Is there display at LCD of Portable Unit?
NG
Check Link.
NO
Is there display at LCD of Portable Unit?
OK
Check LCD of Base Unit.
NO
Is there caller ID signal between Pin 2 and Pin 3 of IC201?
NO
Check PO1, L101, L102, C201, C202, R201, R202, D201, D202.
OK
Is there serial data at Pin 7 of IC201?
NO
Check IC201.
OK
Is there clock wave at Pin 65 and Pin 68 of IC501?
NO
Check IC501, X501, X502.
OK
Is there caller ID signal (if the data is DTMF type) at Pin 1 of IC502?
NO
Check C512.
OK
Is there serial data at Pin 8, 9, 10, 11 of IC502?
NO
Check IC502, CN902.
Is there caller ID signal (if the data is FSK type) at Pin1, 2 of CN902?
NO
Check R219, R220, D501, D502, C215, C26.
OK
Is there caller ID signal between Pin 87 and Pin 88 of IC501?
NO
Check CN902, Cable, C215, C216, R219, R220, D501, D502.

21.13. Bell reception

Base Unit


When bell signal coming, is there bell signal at base of Q101?
NO
Check PO1, SA1, L101, L102, R101, R102, C101, C102, R103, C103, D101, D102.
YES
When bell signal coming, is there bell signal at Pin 1 of IC901?
NO
Check Q101, R104, C104, R927.
YES
Is there TX DATA signal at Pin 32 of IC901?
NO
Check around IC901, X902.
YES
Check link.

Portable Unit


When bell signal coming, does the operation change from save mode to standby mode?
NO
Check C123, R122, C121, R121, C120, R908, Pin 29 of IC901.
YES
Check link.

21.14. Initial Set-up after Replacing EEPROM

<Important>
When EEPROM is replaced, following procedure is required to initialize the contents of the EEPROM.

1. BASE UNIT

A. Set the BASE UNIT to the test mode. 13.1.1 Test Mode Flow Chart (Base Unit)
B. Turn the BASE UNIT OFF.
C. Write the ID CODE according to the ID CODE label on the BASE UNIT. 4.2 ID Writing (For service activity)
D. Turn the BASE UNIT OFF.
E. Make sure the contents of the EEPROM

- **ID CODE: It should be linked with the PORTABLE UNIT.**
- **DIAL MODE: TONE**
- **FLASH time: 700 msec**

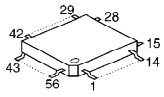
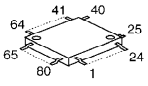
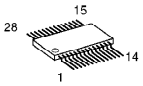
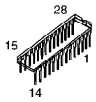
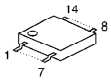
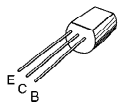
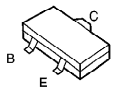
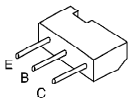
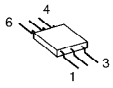
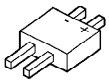
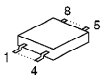
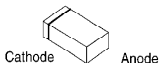
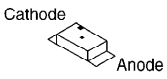
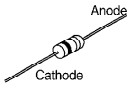
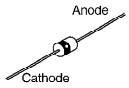
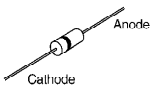
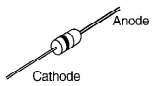
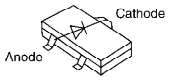
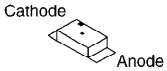
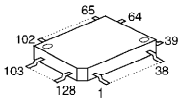
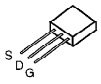
2. PORTABLE UNIT

A. Set the PORTABLE UNIT to the test mode. 15.2 How to set the test mode
B. Turn the PORTABLE UNIT OFF.
C. Write the ID CODE according to the ID CODE label on the PORTABLE UNIT. 4.2 ID Writing (For service activity)
D. Turn the PORTABLE UNIT OFF.
E. Make sure the contents of the EEPROM

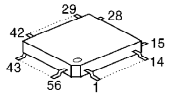
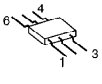
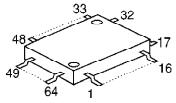
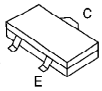
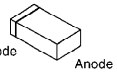
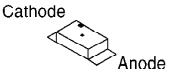
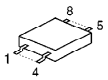
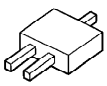
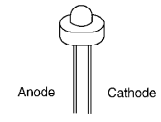
- **ID CODE: It should be linked with the BASE UNIT.**

22. TERMINAL GUIDE OF IC´S, TRANSISTORS AND DIODES

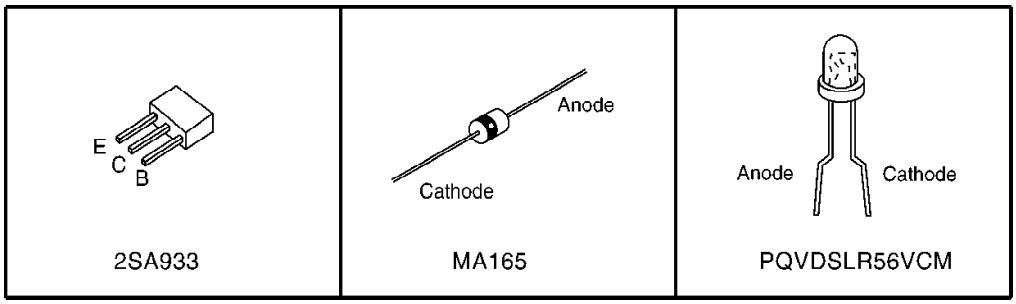
22.1. Base Unit

PQVINJM2904F	 AN6266FA	PQVIBA8206	 PQVI3635A21F	 PQVIAS2504
PQVIBA08FPE2	 PQVISC77655S	 PQVILC73872M	 2SA1625, PQVIUM66T11L PQVT2N6517CA	2SA933
 2SD1819A, UN5213, UN5113, 2SB1218A PQVDHVC375, MA728	 2SB1322, 2SD1991A	 PQVITK14620M	 PQVDS1ZB60F1	
 PQVIS93C46DJ	 MA8062, MA111 MA2S111	 PQVDSML310MT	 MA4020, MA4062 MA4120, MA4300	 1SS119
 PQVDHZ3BLL	 MA700A	 MA153	 PQVDBR1111C	 PQVI93423021
 2SK1398				

22.2. Portable Unit

 AN6265FA	 PQVITK14620M	 MN101C30AKD	 2SC2412K PQVT143XK146 PQVTD123T146 PQVTDTC143E	 MA111 MA2S111 MA8056H MA8082M MA2SV01001KU PQVDHRU0203A
 PQVDSML310MT	 PQVIS93C46DJ	 2SD1664Q	 LNJ301MPUJA	

22.3. Charger

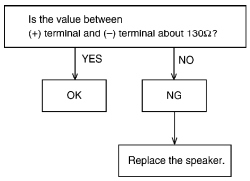


23. HOW TO CHECK THE PORTABLE UNIT SPEAKER

1. Prepare the digital voltmeter, and set the selector knob to ohm meter.

2. Put the probes at the speaker terminals as shown in Fig. 8.

3.



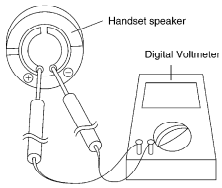
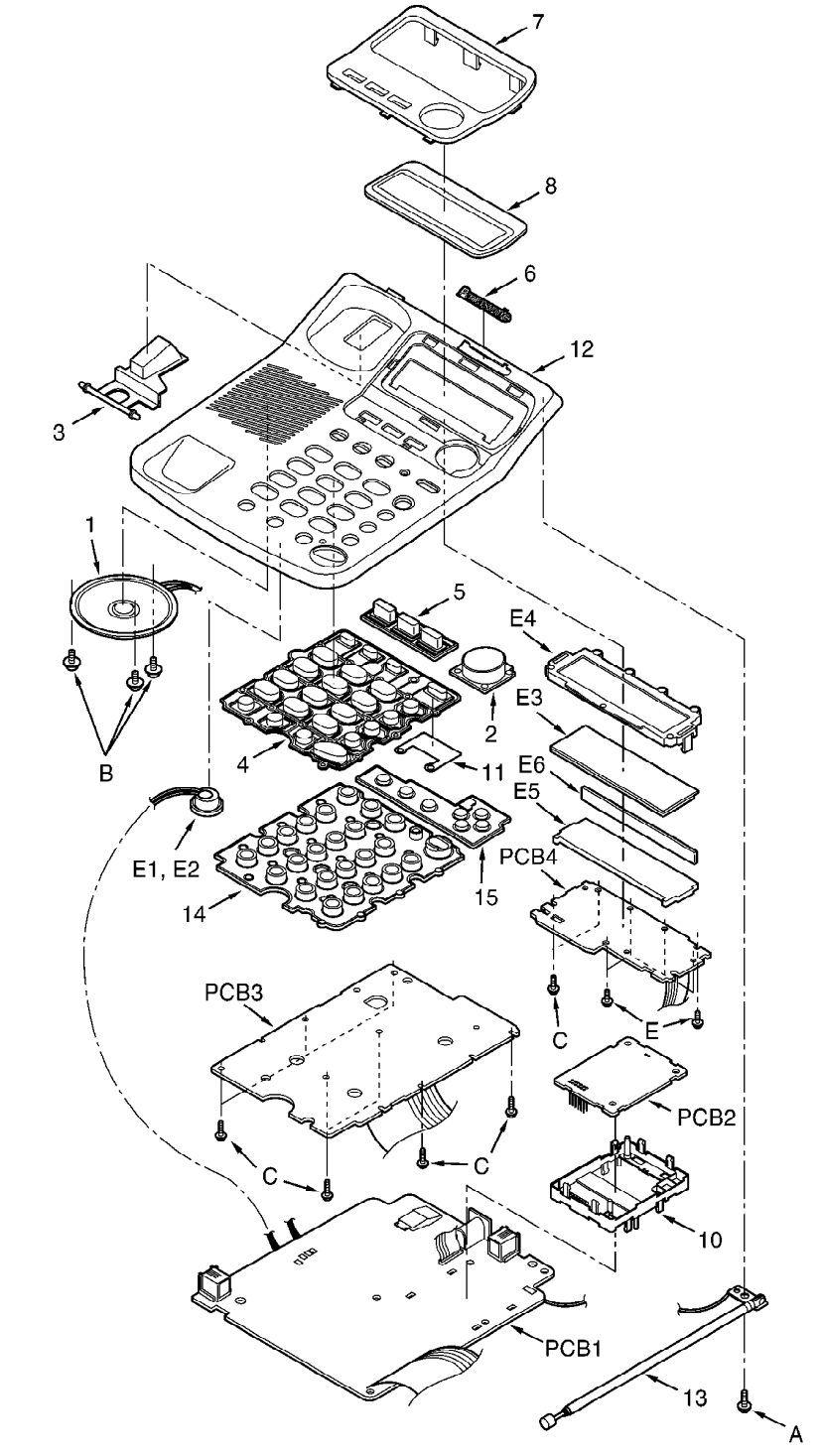


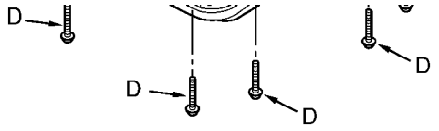
Fig.8

24. CABINET AND ELECTRICAL PARTS LOCATION (BASE UNIT)



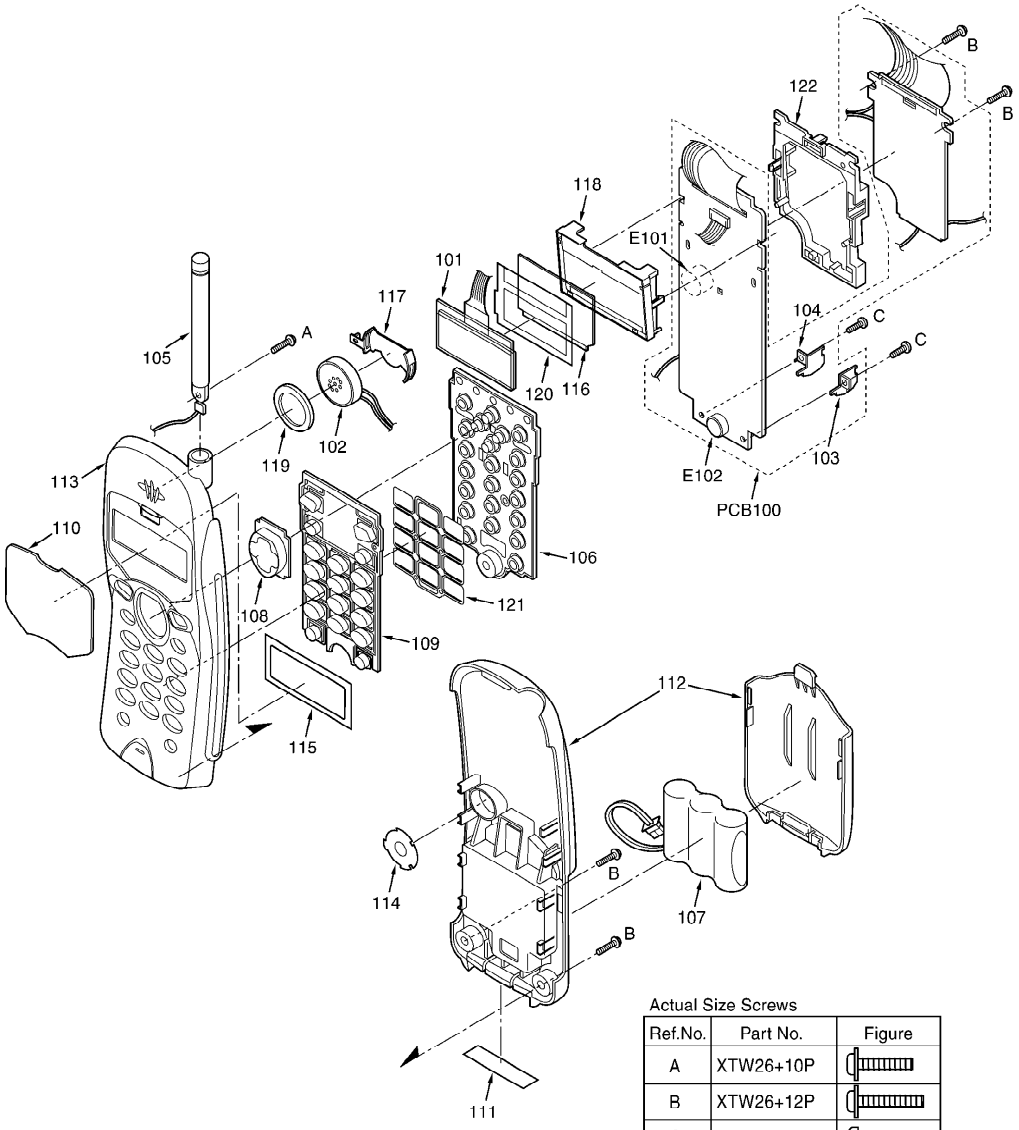
Actual Size Screws

Ref.No.	Part No.	Figure
A	XYC3+CG10FX	
B	PJHE5065Z	
C	XTW26+8P	



D	XTW26+14P	
E	XTW26+7P	

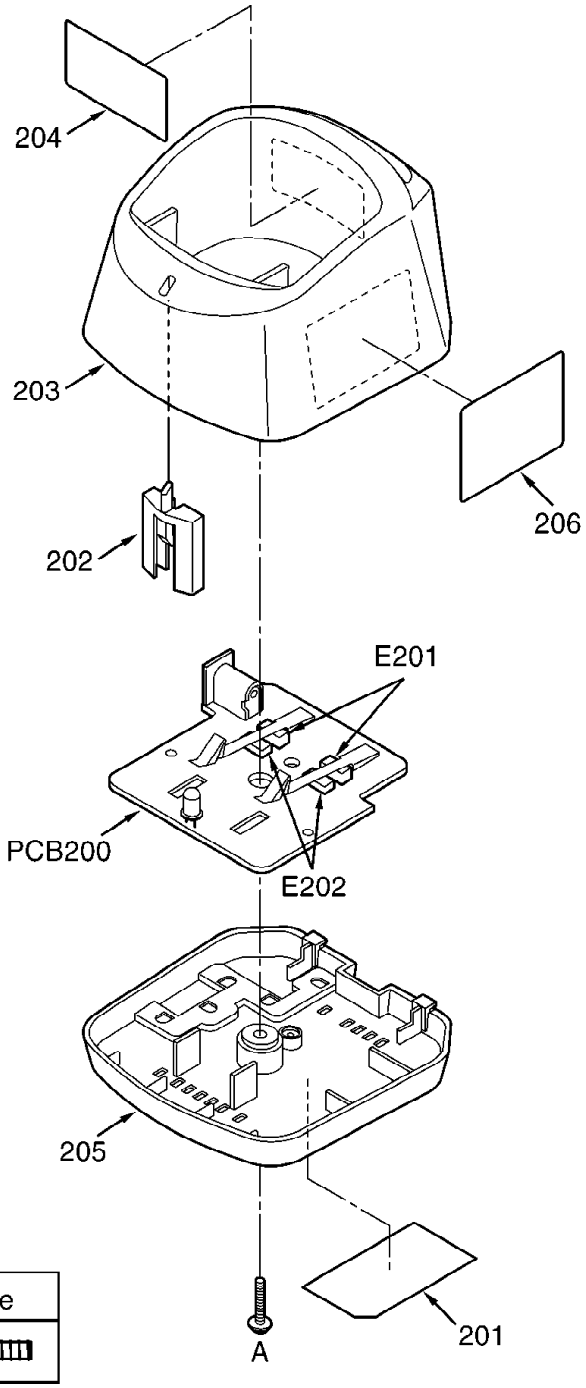
25. CABINET AND ELECTRICAL PARTS LOCATION (PORTABLE UNIT)



Actual Size Screws

Ref.No.	Part No.	Figure
A	XTW26+10P	
B	XTW26+12P	
C	XTB26+10J	

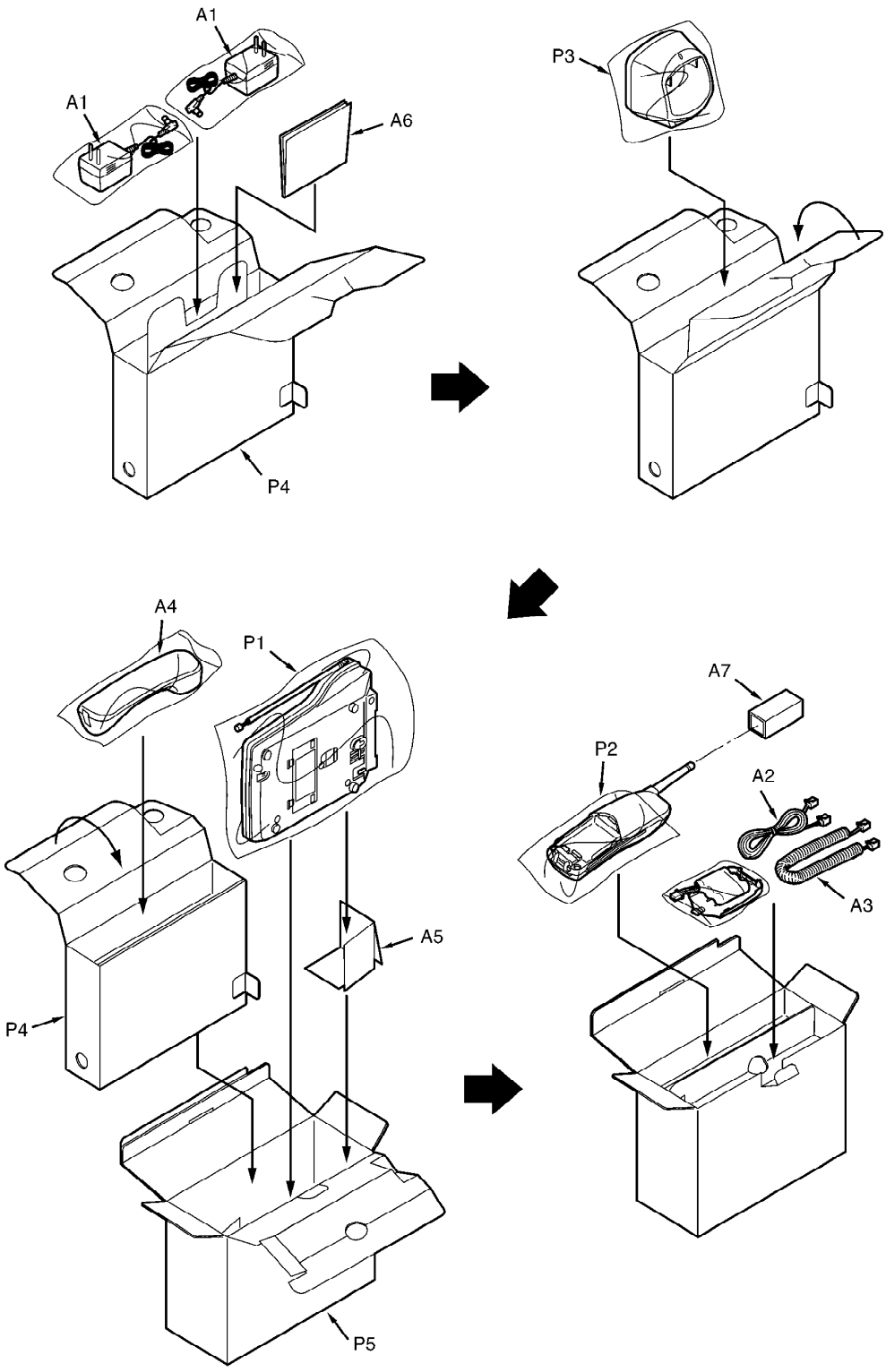
26. CABINET AND ELECTRICAL PARTS LOCATION (CHARGER)



Actual Size Screws

Ref.No.	Part No.	Figure
A	XTW26+12P	

27. ACCESSORIES AND PACKING MATERIALS



28. REPLACEMENT PARTS LIST

This replacement parts list is KX-TC1175BXB/KX-TC1175BXN only.

1. RTL (Retention Time Limited)

Note:

The marking (RTL) indicates that the Retention Time is limited for this item.
After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability depends on the type of assembly and the laws governing parts and product retention. At the end of this period, the assembly will no longer be available.

2. Important safety notice

Components identified by the ⚠ mark indicates special characteristics important for safety. When replacing any of these components, only use specified manufacture's parts.

3. The S mark indicates service standard parts and may differ from production parts.

4. RESISTORS & CAPACITORS

Unless otherwise specified;
All resistors are in ohms (Ω) K=1000 Ω , M=1000k Ω
All capacitors are in MICRO FARADS (μ F)P= μ μ F
*Type & Wattage of Resistor

Type

ERC:Solid	ERX:Metal Film	PQ4R:Carbon
ERD:Carbon	ERG:Metal Oxide	ERS:Fusible Resistor
PQRD:Carbon	ER0:Metal Film	ERF:Cement Resistor

Wattage

10,16:1/8W	14,25:1/4W	12:1/2W	1:1W	2:2W	3:3W

*Type & Voltage of Capacitor

Type

ECFD:Semi-Conductor	ECCD,ECKD,ECBT,PQCBC : Ceramic
ECQS:Styrol	ECQE,ECQV,ECQG : Polyester
PQCUV:Chip	ECEA,ECSZ : Electrolytic
ECQMS:Mica	ECQP : Polypropylene

Voltage

ECQ Type	ECQG ECQV Type	ECSZ Type	Others	
1H: 50V	05: 50V	0F:3.15V	0J :6.3V	1V :35V
2A:100V	1:100V	1A:10V	1A :10V	50,1H:50V
2E:250V	2:200V	1V:35V	1C :16V	1J :63V
2H:500V		0J:6.3V	1E,25:25V	2A :100V

28.1. Base Unit

28.1.1. CABINET AND ELECTRICAL PARTS

Ref. No.	Part No.	Part Name & Description	Remarks
1	PQAS57P01Z	SPEAKER	
2	PQBC10301Z2	BUTTON, NAVIGATOR KEY	S
3	PQBH10027Z4	BUTTON, HOOK (for KX-TC1175BXB)	S
3	PQBH10027Z3	BUTTON, HOOK (for KX-TC1175BXN)	S
4	PQBX10337Z1	BUTTON, 24KEY (for KX-TC1175BXB)	S
4	PQBX10337Y1	BUTTON, 24KEY (for KX-TC1175BXN)	S
5	PQBX10338Z1	BUTTON, 3KEY (for KX-TC1175BXB)	S
5	PQBX10338Z2	BUTTON, 3KEY (for KX-TC1175BXN)	S
6	PQGB7Y	BADGE	
7	PQGG10108Z4	GRILLE (for KX-TC1175BXB)	S
7	PQGG10108Z5	GRILLE (for KX-TC1175BXN)	S
8	PQGP10163Z1	LCD PANEL	S
9	PQGT14161Z	NAME PLATE (for KX-TC1175BXB)	
9	PQGT14173Z	NAME PLATE (for KX-TC1175BXN)	
10	PQHR10657Z	RF HOLDER	
11	PQHX10981Z	DIFFUSION SHEET	
12	PQKM10429Z4	UPPER CABINET (for KX-TC1175BXB)	S
12	PQKM10429Z2	UPPER CABINET (for KX-TC1175BXN)	S
13	PQSA10104Z	ANTENNA (for KX-TC1175BXB)	
13	PQSA10104Y	ANTENNA (for KX-TC1175BXN)	
14	PQSX10131Z	RUBBER SWITCH, 24KEY	
15	PQSX10132Z	RUBBER SWITCH, 7KEY	
16	PQYF10166Z1	LOWER CABINET (for KX-TC1175BXB)	S
16	PQYF10166Z2	LOWER CABINET (for KX-TC1175BXN)	S

28.1.2. MAIN P.C.BOARD PART

Ref. No.	Part No.	Part Name & Description	Remarks
PCB1	PQWP11175BXH	MAIN P.C.BOARD ASS'Y (RTL)	
		(ICS)	
IC1	PQVIBA8206	IC	
IC201	PQVINJM2904F	IC	S
IC301	PQVIAS2504	IC	
IC401	PQVIBA08FPE2	IC	
IC601	PQVISC77655S	IC	
IC901	PQVI3635A21F	IC	
IC902	PQVIS93C46DJ	IC	
IC903	PQVIUM66T11L	IC	
		(TRANSISTORS)	
Q1	2SD1819A	TRANSISTOR(SI)	
Q101	2SD1819A	TRANSISTOR(SI)	
Q102	2SK1398	TRANSISTOR(SI)	
Q103	2SA1625	TRANSISTOR(SI)	

Ref. No.	Part No.	Part Name & Description	Remarks
Q104	PQVT2N6517CA	TRANSISTOR(SI)	
Q106	2SD1819A	TRANSISTOR(SI)	
Q107	2SA933	TRANSISTOR(SI)	
Q108	2SB1322	TRANSISTOR(SI)	
Q301	UN5213	TRANSISTOR(SI)	S
Q302	UN5213	TRANSISTOR(SI)	S
Q303	UN5213	TRANSISTOR(SI)	S
Q305	2SB1218A	TRANSISTOR(SI)	
Q401	2SD1819A	TRANSISTOR(SI)	
Q402	2SD1991A	TRANSISTOR(SI)	
Q403	2SD1819A	TRANSISTOR(SI)	
Q404	2SB1218A	TRANSISTOR(SI)	
Q405	2SD1819A	TRANSISTOR(SI)	
Q601	UN5213	TRANSISTOR(SI)	S
Q602	UN5213	TRANSISTOR(SI)	S
Q650	2SD1819A	TRANSISTOR(SI)	
Q901	UN5213	TRANSISTOR(SI)	S
Q902	UN5113	TRANSISTOR(SI)	
Q903	2SD1819A	TRANSISTOR(SI)	
		(DIODES)	
D1	PQVDS1ZB60F1	DIODE(SI)	
D2	MA4300	DIODE(SI)	
D101	MA153	DIODE(SI)	
D102	PQVDS1ZB60F1	DIODE(SI)	
D105	MA111	DIODE(SI)	
D106	MA4120	DIODE(SI)	
D107	MA111	DIODE(SI)	
D108	MA4020	DIODE(SI)	
D109	MA111	DIODE(SI)	
D201	MA153	DIODE(SI)	
D202	MA153	DIODE(SI)	
D301	MA111	DIODE(SI)	
D302	MA111	DIODE(SI)	
D401	MA4300	DIODE(SI)	
D402	MA4062	DIODE(SI)	
D403	MA8062	DIODE(SI)	
D404	MA111	DIODE(SI)	
D405	MA111	DIODE(SI)	
D406	MA111	DIODE(SI)	
D407	MA111	DIODE(SI)	
D408	PQVDHZ3BLL	DIODE(SI)	
D409	MA700A	DIODE(SI)	

Ref. No.	Part No.	Part Name & Description	Remarks
D410	MA111	DIODE(SI)	
D701	1SS119	DIODE(SI)	
D702	1SS119	DIODE(SI)	
D920	MA111	DIODE(SI)	
DS01	MA2S111	DIODE(SI)	
DS02	MA2S111	DIODE(SI)	
DS07	MA2S111	DIODE(SI)	
		(COILS)	
L101	PQLQZK3R3K	COIL	
L102	PQLQZK3R3K	COIL	
L301	PQLQZM100K	COIL	
L302	PQLQZM100K	COIL	
L303	PQLQZM100K	COIL	
L304	PQLQZM100K	COIL	
L401	PQLQZM100K	COIL	S
L403	PQLQZM100K	COIL	
L404	PQLQZM100K	COIL	
L701	PQLQZKR82M	COIL	S
L901	PQLQZM101K	COIL	
L902	PQLQR2KA113	COIL	
L903	PQLQR2KA113	COIL	
L904	PQLQR2KA113	COIL	
		(JACKS)	
JJ1	PQJJ1TA15Z	JACK	
JJ2	PQJJ1B4Y	JACK	
JJ3	PQJJ1TB18Z	JACK	
		(CRYSTAL OSCILLATORS)	
X901	PQVCL3276N9Z	CRYSTAL OSCILLATOR	
X902	PQVCK7952N4Z	CRYSTAL OSCILLATOR	
		(OTHERS)	
E1	PQJM122Z	MICROPHONE	
E2	PQMG10022Z	CUSHION, MIC RUBBER	
FFC	PQJE10102Z	FFC	
FFC	PQJS14B33Z	FFC	
PC1	PQVIPC817K	PHOTO ELECTRIC TRANSDUCER	
SA1	PQVDDSS301L	VARISTOR	
SW101	ESE14A211	PUSH SWITCH	
T1	PQLT2D3A	TRANSFORMER	
VR701	EVNDXAA03B53	VARIABLE RESISTOR	

Ref. No.	Part No.	Part Name & Description	Remarks
		(RESISTORS)	
R1	ERDS1TJ622	6.2k	S
R2	PQ4R10XJ103	10k	S
R3	PQ4R10XJ224	220k	S
R4	PQ4R10XJ104	100k	S
R5	PQ4R10XJ222	2.2k	S
R6	PQ4R10XJ224	220k	S
R7	ERJ3GEYJ472	4.7k	
R101	PQ4R10XJ104	100k	S
R102	PQ4R10XJ104	100k	S
R103	ERJ3GEYJ472	4.7k	
R104	ERJ3GEYJ473	47k	
R107	PQ4R10XJ105	1M	S
R108	PQ4R10XJ154	150k	S
R109	PQ4R10XJ224	220k	S
R110	PQ4R10XJ104	100k	S
R111	PQ4R10XJ472	4.7k	S
R116	PQ4R10XJ683	68k	S
R117	PQ4R10XJ103	10k	S
R118	PQ4R10XJ682	6.8k	S
R119	ERJ3GEYJ152	1.5k	
R121	ERDS1TJ330	33	S
R122	PQ4R10XJ331	330	S
R123	PQ4R10XJ122	1.2k	S
R124	PQ4R10XJ562	5.6k	S
R126	PQ4R10XJ562	5.6k	S
R128	ERDS1TJ470	47	S
R201	PQ4R10XJ334	330k	S
R202	PQ4R10XJ334	330k	S
R203	ERJ3GEYJ274	270k	
R204	ERJ3GEYJ513	51k	
R205	ERJ3GEYJ103	10k	
R206	ERJ3GEYJ103	10k	
R219	PQ4R10XJ104	100k	S
R220	PQ4R10XJ104	100k	S
R221	ERJ3GEYJ104	100k	
R222	ERJ3GEYJ104	100k	
R223	ERJ3GEYJ563	56k	
R301	ERJ3GEYJ474	470k	
R303	ERJ3GEYJ824	820k	
R304	ERJ3GEYJ332	3.3k	
R305	ERJ3GEYJ103	10k	
R306	ERJ3GEYJ183	18k	
R307	ERJ3GEYJ563	56k	
R308	ERJ3GEYJ222	2.2k	

Ref. No.	Part No.	Part Name & Description	Remarks
R309	ERJ3GEYJ563	56k	
R311	ERJ3GEYJ103	10k	
R312	ERJ3GEYJ103	10k	
R313	ERJ3GEYJ103	10k	
R314	ERJ3GEYJ103	10k	
R315	ERJ3GEYJ103	10k	
R317	ERJ3GEYJ183	18k	
R318	ERJ3GEYJ183	18k	
R319	ERJ3GEYJ181	180	
R320	ERJ3GEYJ102	1k	
R321	ERJ3GEYJ102	1k	
R322	ERJ3GEYJ223	22k	
R323	ERJ3GEYJ223	22k	
R326	ERJ3GEY0R00	0	
R327	ERJ3GEYJ473	47k	
R328	ERJ3GEYJ103	10k	
R330	ERJ3GEYJ104	100k	
R331	ERJ3GEYJ222	2.2k	
R401	ERJ3GEYJ154	150k	
R402	ERJ3GEYJ103	10k	
R403	ERDS2TJ471	470	
R404	ERJ3GEYJ474	470k	
R405	ERJ3GEYJ474	470k	
R406	ERJ3GEYJ106	10M	
R407	ERJ3GEYJ334	330k	
R408	ERJ3GEYJ105	1M	
R409	ERJ3GEYJ105	1M	
R410	ERJ3GEYJ104	100k	
R411	ERJ3GEYJ104	100k	
R601	ERJ3GEYJ821	820	
R602	ERJ3GEYJ472	4.7k	
R603	ERJ3GEYJ562	5.6k	
R604	ERJ3GEYJ303	30k	
R605	ERJ3GEYJ683	68k	
R606	ERJ3GEYJ225	2.2M	
R607	ERJ3GEYJ275	2.7M	
R608	ERJ3GEYJ104	100k	
R609	ERJ3GEYJ472	4.7k	
R610	ERJ3GEYJ222	2.2k	
R611	ERJ3GEYJ823	82k	
R612	ERJ3GEYJ103	10k	
R613	ERJ3GEYJ472	4.7k	
R614	ERJ3GEYJ104	100k	
R615	ERJ3GEYJ392	3.9k	
R616	ERJ3GEYJ183	18k	
R617	ERJ3GEYJ473	47k	
R618	ERJ3GEYJ333	33k	

Ref. No.	Part No.	Part Name & Description	Remarks
R619	ERJ3GEYJ334	330k	
R620	ERJ3GEYJ223	22k	
R621	ERJ3GEYJ473	47k	
R622	ERJ3GEYJ683	68k	
R650	ERJ3GEYJ222	2.2k	
R651	ERJ3GEYJ104	100k	
R652	ERJ3GEYJ681	680	
R653	ERJ3GEYJ472	4.7k	
R654	ERJ3GEYJ105	1M	
R701	ERJ3GEYJ105	1M	
R702	ERJ3GEYJ155	1.5M	
R703	ERJ3GEYJ684	680k	
R704	ERJ3GEYJ222	2.2k	
R706	ERJ3GEYJ683	68k	
R707	ERJ3GEY0R00	0	
R708	ERJ3GEYJ823	82k	
R709	ERJ3GEY0R00	0	
R710	ERJ3GEYJ184	180k	
R711	ERJ3GEY0R00	0	
R712	ERJ3GEYJ683	68k	
R713	ERJ3GEYJ563	56k	
R714	ERJ3GEYJ472	4.7k	
R716	ERJ3GEYJ822	8.2k	
R901	ERJ3GEYJ153	15k	
R902	ERJ3GEYJ273	27k	
R903	ERJ3GEYJ563	56k	
R904	ERJ3GEYJ124	120k	
R906	ERJ3GEYJ152	1.5k	
R909	ERJ3GEYJ103	10k	
R910	ERJ3GEYJ223	22k	
R911	ERJ3GEYJ332	3.3k	
R912	ERJ3GEYJ472	4.7k	
R913	ERJ3GEYJ104	100k	
R914	ERDS2TJ104	100k	
R915	ERJ3GEYJ104	100k	
R916	ERJ3GEYJ105	1M	
R917	ERJ3GEYJ472	4.7k	
R918	ERJ3GEY0R00	0	
R919	ERJ3GEYJ472	4.7k	
R920	ERJ3GEYJ472	4.7k	
R921	ERJ3GEYJ472	4.7k	
R922	ERJ3GEYJ152	1.5k	
R923	ERJ3GEYJ104	100k	
R924	ERJ3GEYJ105	1M	
R925	ERJ3GEYJ106	10M	
R926	ERDS2TJ223	22k	
R927	ERJ3GEYJ152	1.5k	

Ref. No.	Part No.	Part Name & Description	Remarks
R928	ERJ3GEYJ152	1.5k	
R929	ERJ3GEYJ104	100k	
R930	ERJ3GEYJ104	100k	
R931	ERJ3GEYJ223	22k	
R932	ERJ3GEYJ223	22k	
R933	ERJ3GEYJ564	560k	
R934	ERJ3GEYJ472	4.7k	
R935	ERJ3GEYJ104	100k	
R936	ERDS2TJ471	470	
R937	ERDS2TJ331	330	
R938	ERDS2TJ471	470	
R939	ERJ3GEYJ103	10k	
R941	ERJ3GEYJ104	100k	
R943	ERJ3GEYJ104	100k	
R945	ERJ3GEYJ103	10k	
R950	ERJ3GEY0R00	0	
R951	ERJ3GEYJ473	47k	
R953	ERJ3GEYJ332	3.3k	
R954	ERJ3GEYJ824	820k	
C712	ERJ3GEY0R00	0	
C902	ERJ3GEY0R00	0	
JP17	PQ4R10XJ000	0	S
JP22	ERJ3GEY0R00	0	
JP31	ERJ3GEY0R00	0	
JP43	PQ4R18XJ000	0	S
JP44	ERJ3GEY0R00	0	
JP45	ERJ3GEY0R00	0	
JP49	PQ4R18XJ000	0	S
JP50	PQ4R18XJ000	0	S
JP54	PQ4R18XJ000	0	S
JP62	ERJ3GEY0R00	0	
JP68	PQ4R18XJ000	0	S
JP69	ERJ3GEY0R00	0	
JP75	ERJ3GEY0R00	0	
JP76	PQ4R18XJ000	0	S
JP77	ERJ3GEY0R00	0	
JP78	ERJ3GEY0R00	0	
JP80	ERJ3GEY0R00	0	
JP81	ERJ3GEY0R00	0	
JP82	PQ4R10XJ000	0	S
JP83	PQ4R18XJ000	0	S

Ref. No.	Part No.	Part Name & Description	Remarks
JP84	PQ4R18XJ000	0	S
JP85	ERJ3GEY0R00	0	
JP86	ERJ3GEY0R00	0	
JP87	ERJ3GEY0R00	0	
JP88	ERJ3GEY0R00	0	
JP89	ERJ3GEY0R00	0	
JP90	ERJ3GEY0R00	0	
JP91	ERJ3GEY0R00	0	
JP92	ERJ3GEY0R00	0	
JP93	ERJ3GEY0R00	0	
JP96	PQ4R10XJ000	0	S
JP97	PQ4R10XJ000	0	S
JP98	PQ4R18XJ000	0	S
JP100	ERJ3GEY0R00	0	
JP101	ERJ3GEY0R00	0	
JP111	ERJ3GEY0R00	0	
JP114	ERJ3GEY0R00	0	
JP120	ERJ3GEY0R00	0	
JP121	ERJ3GEY0R00	0	
JP122	ERJ3GEY0R00	0	
JP123	ERJ3GEY0R00	0	
JP124	ERJ3GEY0R00	0	
JP126	PQ4R10XJ000	0	S
JP127	ERJ3GEY0R00	0	
JP128	ERJ3GEY0R00	0	
JP129	ERJ3GEY0R00	0	
JP130	ERJ3GEY0R00	0	
JP132	ERJ3GEY0R00	0	
JP551	ERJ3GEY0R00	0	
JP552	ERJ3GEY0R00	0	
JP553	ERJ3GEY0R00	0	
JP555	ERJ3GEY0R00	0	
JP560	ERJ3GEY0R00	0	
JP563	ERJ3GEY0R00	0	
JP565	ERJ3GEY0R00	0	
JP566	ERJ3GEY0R00	0	
JP567	ERJ3GEY0R00	0	
JP568	PQ4R18XJ000	0	S
JP571	ERJ3GEY0R00	0	
JP575	ERJ3GEY0R00	0	
JP576	ERJ3GEY0R00	0	
JP579	ERJ3GEY0R00	0	
JP583	ERJ3GEY0R00	0	
JP585	ERJ3GEY0R00	0	
JP586	ERJ3GEY0R00	0	

Ref. No.	Part No.	Part Name & Description	Remarks
JP588	ERJ3GEY0R00	0	
JP589	ERJ3GEY0R00	0	
JP591	ERJ3GEY0R00	0	
JP592	ERJ3GEY0R00	0	
JP593	ERJ3GEY0R00	0	
JP594	ERJ3GEY0R00	0	
JP595	ERJ3GEY0R00	0	
JP596	ERJ3GEY0R00	0	
JP597	ERJ3GEY0R00	0	
JP598	ERJ3GEY0R00	0	
JP599	ERJ3GEY0R00	0	
JP600	ERJ3GEY0R00	0	
JP601	ERJ3GEY0R00	0	
JP602	PQ4R18XJ000	0	S
JP603	PQ4R18XJ000	0	S
JP604	ERJ3GEY0R00	0	
JP606	PQ4R18XJ000	0	S
JP610	PQ4R18XJ000	0	S
JP613	PQ4R18XJ000	0	S
JP618	PQ4R18XJ000	0	S
		(CAPACITORS)	
C1	ECQE2E105KZ	1	S
C2	ECEA1HKS100	10	S
C3	ECEA1HKSR22	0.22	
C4	PQCUV1H822KB	0.0082	
C5	ECEA1HKA010	1	
C101	PQCUV1C154KB	0.15	
C102	PQCUV1C154KB	0.15	
C103	PQCUV1A684KB	0.68	
C104	ECUV1H333KBV	0.033	S
C105	ECKD2H681KB	680P	S
C106	ECKD2H681KB	680P	S
C107	PQCUV1H103ZF	0.01	
C108	PQCUV1H472KB	0.0047	
C110	ECEA1CU221	220	
C111	PQCUV1H103ZF	0.01	
C112	PQCUV1C105ZF	1	
C115	PQCUV1H822KB	0.0082	
C116	ECEA1HKA010	1	
C117	ECEA1CK101	100	S
C118	PQCUV1H102J	0.001	S
C120	PQCUV1H103ZF	0.01	
C201	ECKT2H222KBL	0.0022	
C202	ECKT2H222KBL	0.0022	
C203	ECUV1H101JCV	100P	

Ref. No.	Part No.	Part Name & Description	Remarks
C215	PQCUV1H103KB	0.01	
C216	PQCUV1H103KB	0.01	
C301	ECUV1H102KBV	0.001	
C303	ECUV1H102KBV	0.001	
C304	ECUV1C473KBV	0.047	
C305	ECUV1C473KBV	0.047	
C306	ECUV1H681JCV	680P	S
C307	ECUV1H681JCV	680P	S
C308	ECUV1A105ZFV	1	
C309	ECUV1C104KBV	0.1	
C310	ECUV1C104KBV	0.1	
C311	ECUV1H681JCV	680P	S
C312	ECUV1H681JCV	680P	S
C314	ECUV1H272KBV	0.0027	
C315	ECUV1H272KBV	0.0027	
C316	ECEA1CKS100	10	
C317	ECUV1C104KBV	0.1	
C318	ECEA1CKS101	100	
C319	ECEA0JKA101	100	
C320	ECEA1HKS010	1	
C321	ECEA1CKS100	10	
C322	ECEA1CKS100	10	
C323	ECUV1H562KBV	0.0056	
C401	PQCUV1C105ZF	1	
C402	ECEA1EKA100	10	
C403	ECUV1A105ZFV	1	
C404	PQCUV1H103KB	0.01	
C405	ECEA1EU470	47	S
C406	ECEA1AU221	220	
C407	PQCUV1E104MD	0.1	S
C408	EECW5R5D473	0.047	S
C409	ECEA0JM222B	2200	
C410	ECUV1C473KBV	0.047	
C411	PQCUV1C224KB	0.22	
C412	ECEA0JM222B	2200	
C601	ECUV1H103KBV	0.01	S
C602	ECUV1C104KBV	0.1	
C603	ECUV1C683KBV	0.068	
C604	ECUV1C104KBV	0.1	
C605	ECUV1H473KBV	0.047	
C606	ECUV1C104KBV	0.1	
C607	PQCUV1C105ZF	1	
C608	PQCUV1C105ZF	1	
C609	ECEA1EK470	47	S
C610	ECEA1VKS4R7	4.7	S
C611	ECUV1C104KBV	0.1	
C612	ECEA1VU330	33	S

Ref. No.	Part No.	Part Name & Description	Remarks
C613	ECEA1AU102	1000	
C614	PQCUV1C105ZF	1	
C615	ECUV1E223KBV	0.022	
C616	PQCUV1C105ZF	1	
C617	ECEA1AU221	220	
C618	ECEA1EK470	47	S
C619	ECEA1VKS4R7	4.7	S
C620	ECEA1CKA100	10	
C621	ECUV1C473KBV	0.047	
C622	ECUV1H473KBV	0.047	
C624	ECUV1H472KBV	0.0047	
C625	ECUV1H103KBV	0.01	
C626	ECUV1A105ZFV	1	
C627	ECUV1A105ZFV	1	
C628	ECUV1A105ZFV	1	
C630	ECUV1H103KBV	0.01	S
C650	ECUV1H333KBV	0.033	S
C651	ECUV1H152KBV	0.0015	
C652	ECUV1C104KBV	0.1	
C701	ECUV1H103KBV	0.01	
C702	PQCUV1H221JC	220P	S
C703	ECUV1H103KBV	0.01	
C704	ECUV1H103KBV	0.01	
C705	ECUV1C104KBV	0.1	
C706	ECUV1A105ZFV	1	
C707	ECUV1H682KBV	0.0068	
C708	ECUV1H152KBV	0.0015	
C714	ECKERS102MB	0.001	
C717	ECUV1H221JCV	220P	
C718	ECUV1E223KBV	0.022	
C901	ECUV1C104KBV	0.1	
C906	ECUV1H221JCV	220P	
C907	ECUV1C104ZFV	0.1	
C908	PQCUV1H223KB	0.022	
C909	ECUV1H120JCV	12P	
C910	ECUV1H120JCV	12P	
C911	ECUV1H180JCV	18P	
C912	ECUV1H180JCV	18P	
C913	ECUV1C104ZFV	0.1	
C914	ECUV1C104ZFV	0.1	
C915	ECEA1CKA100	10	
C916	ECUV1H472KBV	0.0047	
C917	ECUV1H103KBV	0.01	
C918	ECUV1C473KBV	0.047	
C919	ECUV1H472KBV	0.0047	
C920	ECUV1H102KBV	0.001	

Ref. No.	Part No.	Part Name & Description	Remarks
C921	ECUV1H102KBV	0.001	
C922	ECUV1H102KBV	0.001	
C923	ECUV1H102KBV	0.001	
C924	ECUV1H102KBV	0.001	
C925	ECUV1H102KBV	0.001	
C926	ECUV1H102KBV	0.001	
C930	ECUV1C104ZFV	0.1	
C951	ECUV1E223KBV	0.022	

28.1.3. RF P.C.BOARD PARTS

Ref. No.	Part No.	Part Name & Description	Remarks
PCB2	PQWP21175BXH	RF P.C.BOARD ASS'Y (RTL)	
		(ICS)	
IC801	AN6266FA	IC	
IC802	PQVITK14620M	IC	
		(TRANSISTOR)	
Q854	UN5113	TRANSISTOR(SI)	
		(DIODES)	
D804	MA111	DIODE(SI)	
D851	PQVDHVC375	DIODE(SI)	
D881	MA111	DIODE(SI)	
		(CERAMIC FILTERS)	
CF801	PQVFCFS107MT	CERAMIC FILTER	S
CF802	PQVFCFH455F1	CERAMIC FILTER	
		(COILS)	
T801	PQL04B002	COIL	
T851	PQL04B001	COIL	
		(CONNECTORS)	
CN801	PQJP02B80Z	CONNECTOR	
CN802	PQJP12B73Z	CONNECTOR	
		(CRYSTAL OSCILLATOR)	
X801	PQVCK1024LC5	CRYSTAL OSCILLATOR	

Ref. No.	Part No.	Part Name & Description	Remarks
		(DUPLEXES)	
DUP801	ELB6A004	DUPLEX	
DUP802	ELB6A003	DUPLEX	
		(RESISTORS)	
R802	ERJ3GEYJ331	330	
R804	ERJ3GEYJ224	220k	
R805	ERJ3GEYJ682	6.8k	
R806	ERJ3GEYJ563	56k	
R807	ERJ3GEYJ333	33k	
R809	ERJ3GEYJ153	15k	
R810	ERJ3GEY0R00	0	
R811	ERJ3GEYJ393	39k	
R815	ERJ3GEYJ683	68k	
R817	ERJ3GEY0R00	0	
R818	ERJ3GEYJ124	120k	
R819	ERJ3GEYJ124	120k	
R820	ERJ3GEYJ682	6.8k	
R821	ERJ3GEYJ103	10k	
R822	ERJ3GEYJ222	2.2k	
R824	ERJ3GEYJ103	10k	
R825	ERJ3GEY0R00	0	
R827	ERJ3GEYJ823	82k	
R851	ERJ3GEY0R00	0	
R853	ERJ3GEYJ104	100k	
R854	ERJ3GEYJ334	330k	
R856	ERJ3GEYJ223	22k	
R857	ERJ3GEYJ104	100k	
R858	ERJ3GEYJ332	3.3k	
R859	ERJ3GEYJ220	22	
R860	PQ4R10XJ220	22	S
R862	ERJ3GEYJ391	390	
R864	ERJ3GEYJ221	220	
R865	ERJ3GEYJ151	150	
R881	ERJ3GEYJ680	68	
C828	ERJ3GEY0R00	0	
C854	ERJ3GEY0R00	0	
J881	PQ4R10XJ000	0	S
J882	ERJ3GEY0R00	0	
J884	ERJ3GEY0R00	0	
J886	ERJ3GEY0R00	0	
L805	PQ4R18XJ000	0	S

Ref. No.	Part No.	Part Name & Description	Remarks
		(CAPACITORS)	
C804	ECUV1C103KBV	0.01	
C805	ECUV1C103KBV	0.01	
C806	ECUV1C104KBV	0.1	
C807	ECUV1C104KBV	0.1	
C808	ECEA1CKA100	10	
C809	ECUV1C104ZFV	0.1	
C810	ECUV1H680JCV	68P	
C811	ECUV1C104KBV	0.1	
C812	ECUV1H121JCV	120P	
C813	ECUV1H121JCV	120P	
C814	ECUV1C103KBV	0.01	
C815	ECUV1H333KBV	0.033	S
C816	ECUV1H122KBV	0.0012	
C818	ECUV1H471JCV	470P	S
C819	ECUV1C104KBV	0.1	
C820	ECUV1C683KBV	0.068	
C821	ECUV1C473KBV	0.047	
C822	ECUV1C104KBV	0.1	
C824	ECUV1H271JCV	270P	
C825	ECUV1H681JCV	680P	S
C826	ECUV1C104ZFV	0.1	
C827	ECEA1CKA470	47	
C829	ECUV1C104ZFV	0.1	
C830	ECUV1H271JCV	270P	
C831	ECUV1C104KBV	0.1	
C832	ECUV1H182KBV	0.0018	
C833	ECUV1H121JCV	120P	
C834	ECUV1C104KBV	0.1	
C835	ECUV1H430GCV	43P	
C836	ECUV1H270GCV	27P	
C837	ECUV1H103KBV	0.01	
C838	ECEA1CKA100	10	
C839	ECST0JY475	4.7	
C840	PQCUV1C224KB	0.22	
C841	ECUV1H180JCV	18P	
C842	ECUV1H103KBV	0.01	
C843	ECUV1H103KBV	0.01	
C852	ECUV1C104ZFV	0.1	
C856	ECUV1C104ZFV	0.1	
C857	ECUV1H150JCV	15P	
C858	ECUV1H682KBV	0.0068	
C859	ECUV1H330JCV	33P	
C860	ECUV1H103KBV	0.01	S
C861	ECUV1H103KBV	0.01	
C862	ECUV1H103KBV	0.01	S

Ref. No.	Part No.	Part Name & Description	Remarks
C863	ECUV1C104KBV	0.1	
C864	ECUV1C104KBV	0.1	
C865	ECUV1H103KBV	0.01	
C867	ECUV1H150JCV	15P	
C882	ECUV1C104ZFV	0.1	
C883	ECUV1H103KBV	0.01	
C891	ECUV1H220JCV	22P	
C893	ECST0JY475	4.7	

28.1.4. OPERATIONAL P. C. BOARD PARTS

Ref. No.	Part No.	Part Name & Description	Remarks
PCB3	PQWP31175BXH	OPERATION P.C.BOARD ASS'Y (RTL)	
		(DIODE)	
D551	MA728	DIODE(SI)	
		(LEDS)	
LED551	PQVDBR1111C	DIODE(SI)	S
LED552	PQVDSML310MT	DIODE(SI)	S
LED553	PQVDBR1111C	DIODE(SI)	S

28.1.5. LCD P.C.BOARD PARTS

Ref. No.	Part No.	Part Name & Description	Remarks
PCB4	PQWP41175BXH	LCD P.C.BOARD ASS'Y (RTL)	
		(ICS)	
IC501	PQVI93423021	IC	
IC502	PQVILC73872M	IC	
		(DIODES)	
D501	MA153	DIODE(SI)	
D502	MA153	DIODE(SI)	
		(CRYSTAL OSCILLATORS)	
X501	PQVCL3276N6Z	CRYSTAL OSCILLATOR	
X502	PQVBZTA3.58M	CRYSTAL OSCILLATOR	
		(RESISTORS)	
R501	ERJ3GEYJ124	120k	
R502	ERJ3GEYJ394	390k	
R503	ERJ3GEYJ105	1M	
R504	ERJ3GEY0R00	0	

Ref. No.	Part No.	Part Name & Description	Remarks
R507	ERJ3GEYJ104	100k	
R508	ERJ3GEYJ102	1k	
		(CAPACITORS)	
C501	ECUV1C104ZFV	0.1	
C502	ECUV1C104ZFV	0.1	
C503	ECUV1H472KBV	0.0047	
C504	ECUV1H330JCV	33P	
C505	ECUV1H220JCV	22P	
C506	ECUV1H220JCV	22P	
C507	ECUV1H220JCV	22P	
C508	ECUV1H220JCV	22P	
C509	ECUV1H101JCV	100P	
C510	ECUV1C104ZFV	0.1	
C511	ECUV1C104ZFV	0.1	
C512	ECUV1C473KBV	0.047	
C513	ECUV1H221JCV	220P	
		(OTHERS)	
E3	PQADGS9087Z	LIQUID CRYSTAL DISPLAY	
E4	PQHR10724Y	LCD HOLDER	
E5	PQHR10733Z	LCD SPACER	
E6	PQJE10099Z	ZEBRA CONNECTOR	
FFC	PFJP14A21Z	FFC CONNECTOR	

28.2. Portable Unit

28.2.1. CABINET AND ELECTRICAL PARTS

Ref. No.	Part No.	Part Name & Description	Remarks
101	PQADGP0701GN	LIQUID CRYSTAL DISPLAY	
102	PQAX2P07Z	SPEAKER	
103	PQJT10158Z	CHARGE TERMINAL	
104	PQJT10159Z	CHARGE TERMINAL	
105	PQSA10101X	ANTENNA (for KX-TC1175BXB)	
105	PQSA10101W	ANTENNA (for KX-TC1175BXN)	
106	PQSX10133Z	RUBBER SWITCH	
107	PQXA36ASVC	BATTERY	S
108	PQBC10300Z2	BUTTON, NAVIGATOR KEY	S
109	PQBX10336Z1	BUTTON, 18KEY (for KX-TC1175BXB)	S
109	PQBX10336Y1	BUTTON, 18KEY (for KX-TC1175BXN)	S
110	PQGP10158Y3	LCD PANEL	S
111	PQGT14162Z	NAME PLATE (for KX-TC1175BXB)	
111	PQGT14172Z	NAME PLATE (for KX-TC1175BXN)	
112	PQYF10187Z3	REAR CABINET (for KX-TC1175BXB)	S
112	PQYF10187Z2	REAR CABINET (for KX-TC1175BXN)	S
113	PQYM10096Z3	FRONT CABINET (for KX-TC1175BXB)	S
113	PQYM10096Z2	FRONT CABINET (for KX-TC1175BXN)	S
114	PQHG10527Y	SHEET RUBBER	
115	PQHR10651Z	LCD SPONGE	
116	PQHR10727Z	LCD PLATE	
117	PQHR10739Z	SP HOLDER	
118	PQHR10741Z	LCD HOLDER	
119	PQHS10425Z	SP SPONGE	
120	PQHX10862Z	LCD COVER SHEET	
121	PQHX10975Z	12KEY SPACER	
122	PQHR10743Z	RF HOLDER	

28.2.2. MAIN P.C.BOARD PARTS

Ref. No.	Part No.	Part Name & Description	Remarks
PCB100	PQWPC1175BXR	MAIN P.C.BOARD ASS'Y (RTL)	
		(ICS)	
IC101	AN6265FA	IC	
IC301	PQVITK14620M	IC	
IC901	MN101C30AKD	IC	
IC902	PQVIS93C46DJ	IC	
		(TRANSISTORS)	
Q901	PQVTDTC143E	TRANSISTOR(SI)	
Q903	PQVTD123T146	TRANSISTOR(SI)	S
Q904	PQVTD123T146	TRANSISTOR(SI)	S
Q905	PQVT143XK146	TRANSISTOR(SI)	S
Q906	PQVTD123T146	TRANSISTOR(SI)	S
Q907	PQVTD123T146	TRANSISTOR(SI)	S
Q908	2SC2412K	TRANSISTOR(SI)	
Q910	2SD1664Q	TRANSISTOR(SI)	

Ref. No.	Part No.	Part Name & Description	Remarks
		(DIODES)	
D901	PQVDHRU0203A	DIODE(SI)	
D950	MA111	DIODE(SI)	
D952	MA8056H	DIODE(SI)	
D953	MA8082M	DIODE(SI)	
D954	MA2S111	DIODE(SI)	
D991	MA8056H	DIODE(SI)	
D993	MA8056H	DIODE(SI)	
DA	MA2S111	DIODE(SI)	
DB	MA2S111	DIODE(SI)	
DD	MA2S111	DIODE(SI)	
DE	MA2S111	DIODE(SI)	
DH	MA2S111	DIODE(SI)	
VD301	MA2SV01001KU	DIODE(SI)	
		(LEDS)	
LED902	LNJ301MPUJA	LED	
LED903	LNJ301MPUJA	LED	
LED904	LNJ301MPUJA	LED	
LED905	PQVDSML310MT	LED	
LED906	PQVDSML310MT	LED	
LED907	PQVDSML310MT	LED	
LED908	PQVDSML310MT	LED	
		(CERAMIC FILTERS)	
CF1	PQVFCFS107MT	CERAMIC FILTER	S
CF2	PQVFLTM455FW	CERAMIC FILTER	
		(CONNECTORS)	
CN1	PQJS18A96Z	CONNECTOR	
CN5	PQJP2D13Z	CONNECTOR	
		(COILS)	
L100	PQLQZK1R2K	COIL	
L901	PQLQR3ER68K	COIL	
L902	PQLQR3ER10K	COIL	
L903	PQLQR3ER10K	COIL	
L904	PQLQZM1R0K	COIL	
L905	PQLQR3ER68K	COIL	
T201	PQL04B003	COIL	
T301	PQL04B004	COIL	

Ref. No.	Part No.	Part Name & Description	Remarks
		(CRYSTAL OSCILLATORS)	
X101	PQVCK1024LC5	CRYSTAL OSCILLATOR	
X901	PQVCJ3991N9Z	CRYSTAL OSCILLATOR	
X902	PQVCL3276N9Z	CRYSTAL OSCILLATOR	
		(DUPLEXES)	
DUP101	ELB6A002	DUPLEX	
DUP301	ELB6A001	DUPLEX	
		(OTHERS)	
E101	PQEFBDB111GF	BUZZER	
E102	PQJM122Z	MICROPHONE	
VR901	EVM3SSX50B53	VARIABLE RESISTOR	
		(RESISTORS)	
R101	ERJ3GEYJ680	68	
R102	ERJ3GEY0R00	0	
R104	ERJ3GEYJ331	330	
R106	ERJ3GEYJ751	750	
R107	ERJ3GEY0R00	0	
R109	ERJ3GEYJ152	1.5k	
R121	ERJ3GEYJ224	220k	
R122	ERJ3GEYJ682	6.8k	
R123	ERJ3GEYJ563	56k	
R124	ERJ3GEYJ333	33k	
R125	ERJ3GEY0R00	0	
R126	ERJ3GEYJ153	15k	
R127	ERJ3GEYJ102	1k	
R129	ERJ3GEYJ153	15k	
R130	ERJ3GEYJ223	22k	
R139	ERJ3GEYJ823	82k	
R141	ERJ3GEYJ102	1k	
R151	ERJ3GEY0R00	0	
R152	ERJ3GEYJ103	10k	
R153	ERJ3GEYJ223	22k	
R201	ERJ3GEYJ103	10k	
R203	ERJ3GEYJ224	220k	
R204	ERJ3GEYJ223	22k	
R301	ERJ3GEYJ220	22	
R302	ERJ3GEYJ220	22	
R303	ERJ3GEYJ101	100	
R305	ERJ3GEYJ821	820	

Ref. No.	Part No.	Part Name & Description	Remarks
R321	ERJ3GEYJ222	2.2k	
R322	ERJ3GEYJ473	47k	
R323	ERJ3GEYJ154	150k	
R324	ERJ3GEYJ125	1.2M	
R351	ERJ3GEY0R00	0	
R352	ERJ3GEYJ123	12k	
R353	ERJ3GEYJ473	47k	
R907	ERJ3GEYJ334	330k	
R908	ERJ3GEYJ104	100k	
R909	ERJ3GEYJ104	100k	
R910	ERJ3GEYJ473	47k	
R911	ERJ3GEY0R00	0	
R912	PQ4R10XJ4R7	4.7	S
R913	PQ4R10XJ390	39	S
R914	ERJ3GEYJ120	12	
R915	ERJ3GEYJ104	100k	
R916	ERJ3GEY0R00	0	
R921	ERJ3GEYJ824	820k	
R922	ERJ3GEYJ125	1.2M	
R924	ERJ3GEYJ684	680k	
R925	ERJ3GEYJ103	10k	
R926	ERJ3GEYJ104	100k	
R933	ERJ3GEYJ221	220	
R934	ERJ3GEYJ222	2.2k	
R936	ERJ3GEY0R00	0	
R941	ERJ3GEYJ151	150	
R942	ERJ3GEYJ151	150	
R943	ERJ3GEYJ151	150	
R944	ERJ3GEYJ331	330	
R945	ERJ3GEYJ331	330	
R946	ERJ3GEYJ331	330	
R947	ERJ3GEYJ331	330	
R948	ERJ3GEYJ222	2.2k	
R949	ERJ3GEYJ222	2.2k	
R950	ERJ3GEYJ222	2.2k	
R951	ERJ3GEYJ222	2.2k	
R952	ERJ3GEYJ222	2.2k	
R953	ERJ3GEYJ222	2.2k	
R954	ERJ3GEYJ104	100k	
R955	ERJ3GEYJ103	10k	
R956	ERJ3GEYJ472	4.7k	
R957	ERJ3GEYJ222	2.2k	
R958	ERJ3GEYJ222	2.2k	
R961	ERJ3GEYJ103	10k	
R962	ERJ3GEYJ223	22k	

Ref. No.	Part No.	Part Name & Description	Remarks
R963	PQ4R10XJ271	270	S
R964	PQ4R10XJ331	330	S
R965	PQ4R10XJ221	220	S
JP1	ERJ3GEY0R00	0	
JP2	ERJ3GEY0R00	0	
JP3	PQ4R18XJ000	0	S
JP4	PQ4R10XJ000	0	S
JP5	PQ4R10XJ000	0	S
JP6	PQ4R10XJ000	0	S
J101	ERJ3GEY0R00	0	
J301	ERJ3GEY0R00	0	
L101	PQ4R18XJ000	0	S
L301	PQ4R18XJ000	0	S
C100	ERJ3GEY0R00	0	
C301	ERJ3GEY0R00	0	
		(CAPACITORS)	
C99	ECKERS102MB	0.001	
C101	ECUV1H103KBV	0.01	
C102	ECUV1C104ZFV	0.1	
C103	ECUV1H103KBV	0.01	
C104	ECUV1C104ZFV	0.1	
C106	ECUV1H103KBV	0.01	
C107	ECUV1C104ZFV	0.1	
C108	ECUV1C104ZFV	0.1	
C109	ECUV1H680JCV	68P	
C110	ECST0JX336	33	
C111	ECUV1C104KBV	0.1	
C112	ECUV1C104ZFV	0.1	
C120	ECUV1H121JCV	120P	
C121	ECUV1H121JCV	120P	
C122	ECUV1C104KBV	0.1	
C123	ECUV1H103KBV	0.01	
C124	ECUV1C473KBV	0.047	
C126	ECUV1H821JCV	820P	
C127	ECUV1H472KBV	0.0047	
C128	ECUV1C473KBV	0.047	
C129	ECUV1H103KBV	0.01	
C130	ECUV1C473KBV	0.047	
C131	ECUV1C104KBV	0.1	
C132	ECUV1H103KBV	0.01	

Ref. No.	Part No.	Part Name & Description	Remarks
C141	ECUV1H270GCV	27P	
C142	ECUV1H390GCV	39P	
C150	ECUV1H220JCV	22P	
C151	ECUV1H103KBV	0.01	
C152	ECUV1C104KBV	0.1	
C153	ECUV1H472KBV	0.0047	
C155	ECST0JY106	10	
C157	ECUV1C104ZFV	0.1	
C202	ECUV1E223KBV	0.022	
C203	ECUV1H101JCV	100P	
C204	PQCUV1C104KB	0.1	
C205	ECUV1H152KBV	0.0015	
C206	ECUV1H151JCV	150P	
C207	PQCUV1C104KB	0.1	
C208	ECUV1C104ZFV	0.1	
C210	ECUV1C104ZFV	0.1	
C211	ECST0JY106	10	
C221	ECUV1C104KBV	0.1	
C310	ECUV1H103KBV	0.01	
C311	ECUV1H103KBV	0.01	
C312	ECUV1H103KBV	0.01	
C313	ECUV1H103KBV	0.01	
C317	ECUV1C104ZFV	0.1	
C321	ECUV1H270JCV	27P	
C322	ECUV1H270JCV	27P	
C323	ECUV1H123KBV	0.012	
C325	ECUV1H220JCV	22P	
C351	ECUV1A105ZFV	1	
C352	ECUV1E223KBV	0.022	
C353	ECUV1H060DCV	6P	
C901	ECUV1C104ZFV	0.1	
C903	ECEA0JKA221E	220	
C904	ECUV1H330JCV	33P	
C905	ECUV1H330JCV	33P	
C906	ECUV1H330JCV	33P	
C907	ECUV1H330JCV	33P	
C908	ECUV1C104ZFV	0.1	
C909	ECUV1H101JCV	100P	
C910	ECUV1C104ZFV	0.1	
C911	ECUV1H103KBV	0.01	S
C913	PQCUV1C105ZF	1	
C914	ECST0JY106	10	
C921	ECUV1C104KBV	0.1	
C922	ECUV1C104KBV	0.1	

Ref. No.	Part No.	Part Name & Description	Remarks
C923	ECUV1C104KBV	0.1	
C924	ECUV1C104KBV	0.1	
C925	ECUV1C104KBV	0.1	
C926	PQCUV1C474KB	0.47	
C927	PQCUV1C474KB	0.47	
C928	PQCUV1C474KB	0.47	
C929	ECST0JX336	33	
C931	ECST0JY106	10	
C932	ECUV1H103KBV	0.01	S
C933	PQCUV1C473ZF	0.047	
C954	ECUV1H103KBV	0.01	S
C956	PQCUV1C105ZF	1	
C961	ECUV1C104ZFV	0.1	
C991	ECUV1C105ZFV	1	
C995	ECUV1C105ZFV	1	

28.3. Charger

28.3.1. CABINET AND ELECTRICAL PARTS

Ref. No.	Part No.	Part Name & Description	Remarks
201	PQGT14160Z	NAME PLATE (for KX-TC1175BXB)	
201	PQGT14171Z	NAME PLATE (for KX-TC1175BXN)	
202	PQHR10731Z	LED LENS	
203	PQKM10430Z3	UPPER CABINET (for KX-TC1175BXB)	S
203	PQKM10430Z2	UPPER CABINET (for KX-TC1175BXN)	S
204	PQQT22174Z	CHARGE LABEL	
205	PQYF10163Y1	LOWER CABINET (for KX-TC1175BXB)	S
205	PQYF10163Y3	LOWER CABINET (for KX-TC1175BXN)	S
206	PQQT22173Z	CAUTION LABEL	

28.3.2. MAIN P.C.BOARD PARTS

Ref. No.	Part No.	Part Name & Description	Remarks
PCB200	PQWPTC1075CH	MAIN P.C.BOARD ASS'Y (RTL)	
		(TRANSISTOR)	
Q1	2SA933	TRANSISTOR(SI)	
		(DIODE)	
D1	MA165	DIODE(SI)	
		(LED)	
LED1	PQVDSLR56VCM	DIODE(SI)	
		(OTHERS)	
E201	PQHG10599Z	SHEET RUBBER	
E202	PQHG10608Z	SHEET RUBBER	
CHG(+)	PQJT10164Z	CHARGE TERMINAL	
CHG(-)	PQJT10164Z	CHARGE TERMINAL	
CN1	PQJJ1B4Y	JACK	
		(RESISTORS)	
R1	ERDS2TJ1R5	1.5	
R2	ERDS2TJ101	100	
R3	ERDS2TJ681	680	
L1	ERDS2TJ270	27	

28.3.3. ACCESSORIES AND PACKING MATERIALS

Ref. No.	Part No.	Part Name & Description	Remarks
A1	KX-TCA1BX	AC ADAPTOR	⚠
A2	PQJA10075Z	TEL CORD	
A3	PQJA212N	CURL CORD (for KX-TC1175BXB)	
A3	PFJA1028Z	CURL CORD (for KX-TC1175BXN)	
A4	PQJXF0114Z	HANDSET (for KX-TC1175BXB)	
A4	PQJXF0115Z	HANDSET (for KX-TC1175BXN)	
A5	PQPD10440Y	PAD	
A6	PQQX12684Z	INSTRUCTION BOOK	
A7	PQPD10478Z	PAD	
P1	PQPH89Y	PROTECTION COVER	
		(for Base Unit)	
P2	XZB10X30A04	PROTECTION COVER	
		(for Portable Unit)	
P3	XZB15X25A04	PROTECTION COVER	
		(for Charger)	
P4	PQPN11675Z	ACCESSORY BOX	
P5	PQPK13089Z	GIFT BOX (for KX-TC1175BXB)	
P5	PQPK13124Z	GIFT BOX (for KX-TC1175BXN)	

29. FOR SCHEMATIC DIAGRAM

29.1. Base Unit (39 SCHEMATIC DIAGRAM (BASE UNIT))

DC voltage measurements are taken with electronic voltmeter from negative voltage line. (Talk Position)
This schematic diagram may be modified at any time with development of new technology.

> Important Safety Notice:
> Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only the manufacturer's specified parts.

29.2. Portable Unit (41 SCHEMATIC DIAGRAM (PORTABLE UNIT))

DC voltage measurements are taken with electronic voltmeter from negative voltage line. (Talk Position)
This schematic diagram may be modified at any time with the development of new technology.

30. CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM (RF UNIT, BASE)

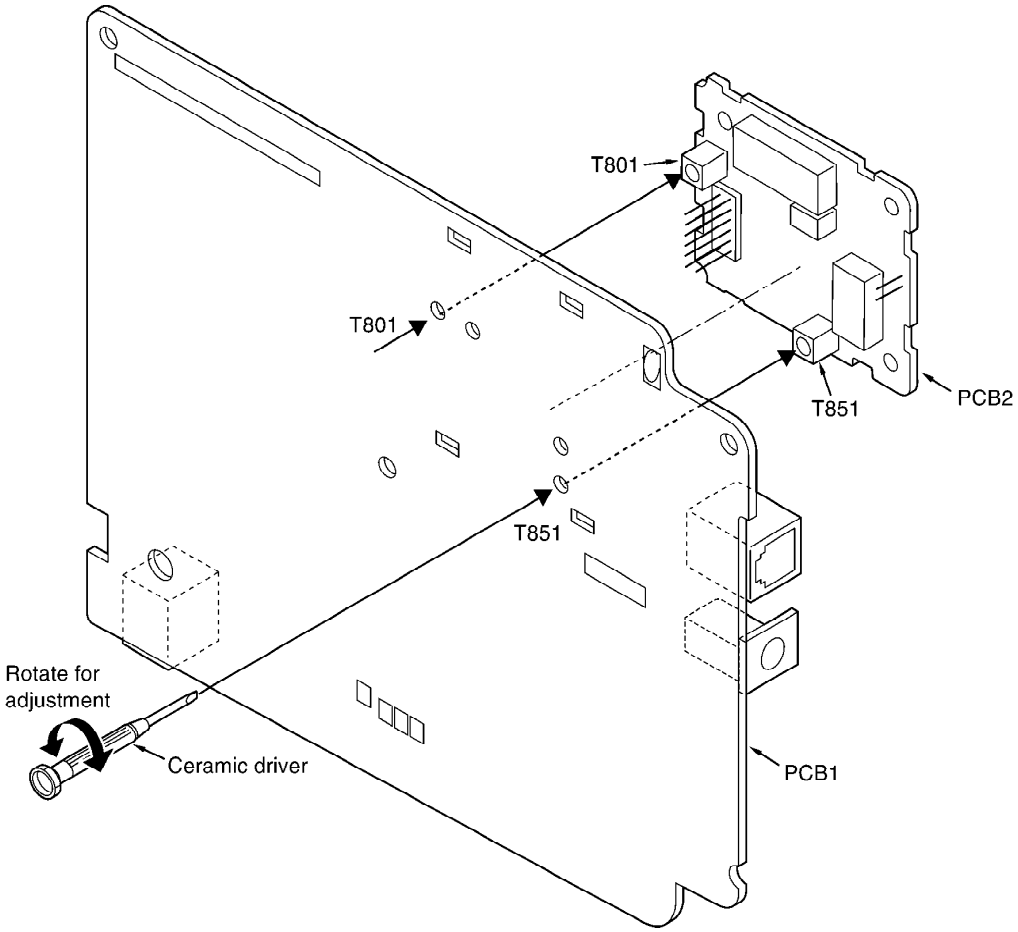
30.1. Component View

30.2. Flow Solder Side View

Note:
Remove the Antenna Wire (Main P.C. Board).

30.3. How to rotate coils and variable resistor for adjustment

1. **To insert the small ceramic driver (-) into the hole from the solder side of PCB1 shown below.**
   holes: T801, T851
2. **It is not necessary to unsolder and remove PCB2 from PCB1 by using below holes.**



31. SCHEMATIC DIAGRAM (RF UNIT, BASE)

32. CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM (OPERATION BOARD)

32.1. Flow Solder Side View

33. SCHEMATIC DIAGRAM (OPERATION BOARD)

34. CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM (LCD BOARD)

34.1. Component View

34.2. Flow Solder Side View

35. SCHEMATIC DIAGRAM (LCD BOARD)

36. CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM (CHARGER)

37. SCHEMATIC DIAGRAM (CHARGER)

38. CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM (BASE UNIT)

38.1. Component View

38.2. Flow Solder Side View

39. SCHEMATIC DIAGRAM (BASE UNIT)

40. CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM (PORTABLE UNIT)

40.1. Component View

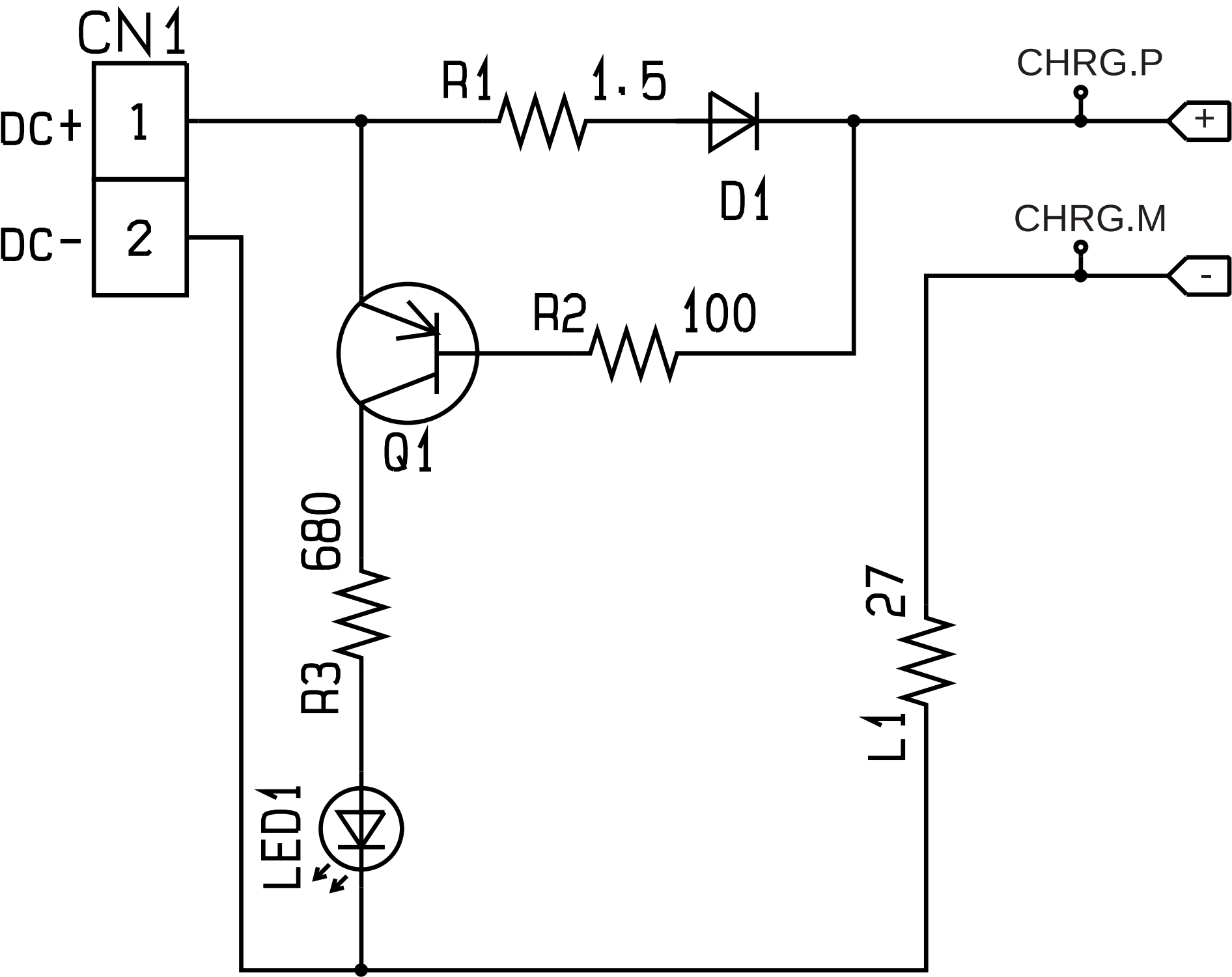
40.2. Flow Solder Side View

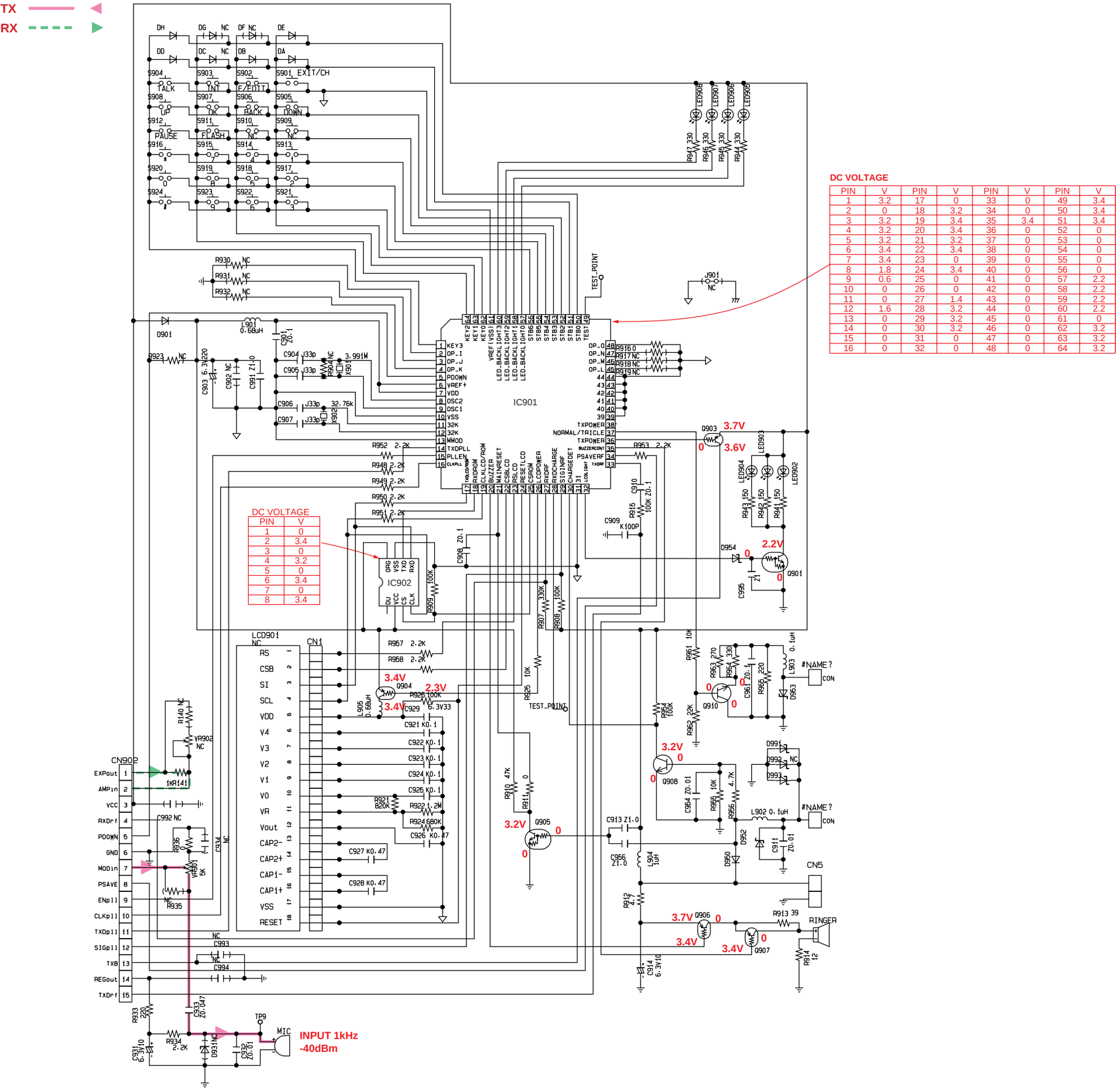
41. SCHEMATIC DIAGRAM (PORTABLE UNIT)

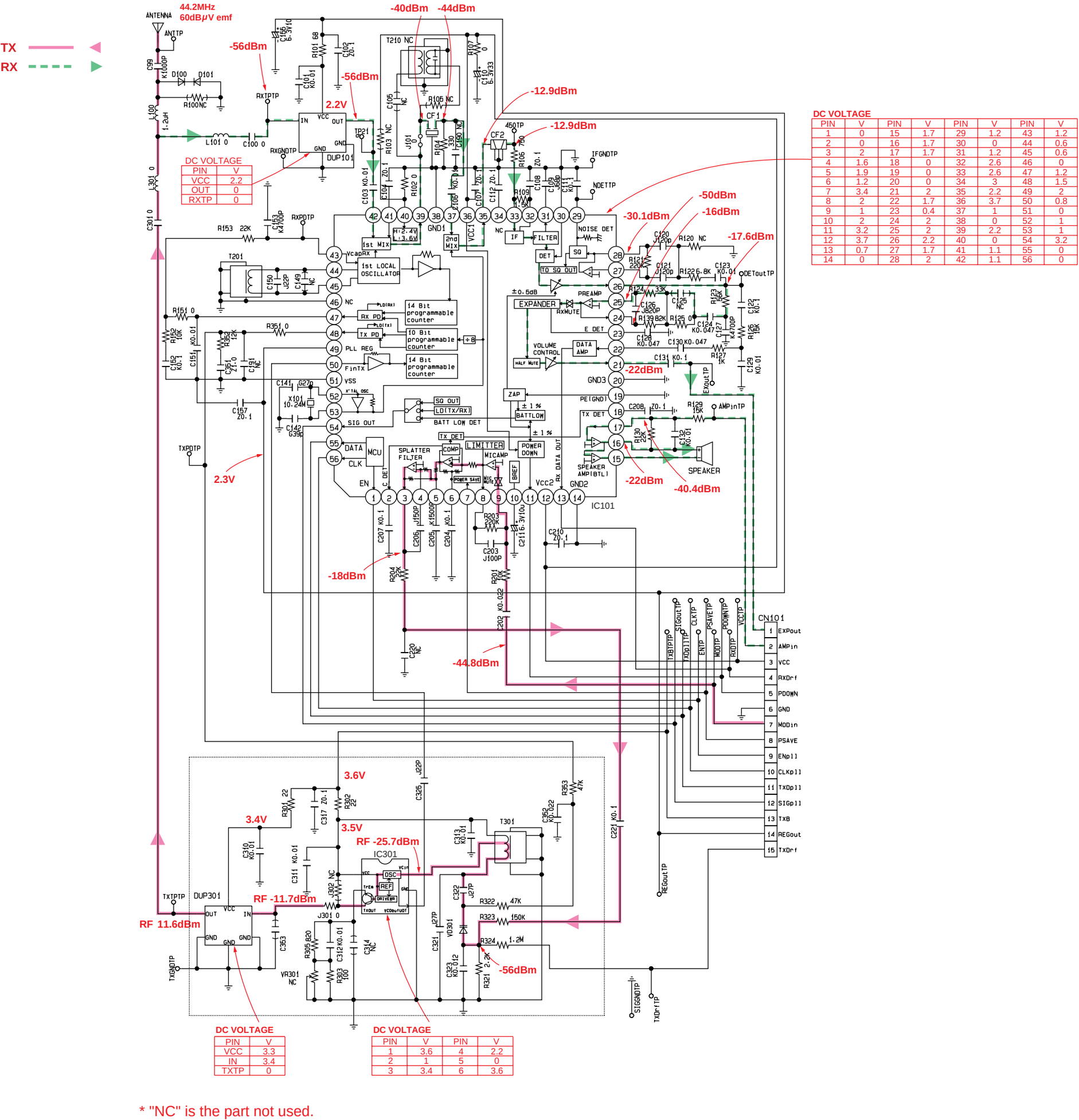
41.1. MAIN P.C. BOARD

41.2. RF BOARD (PORTABLE UNIT)

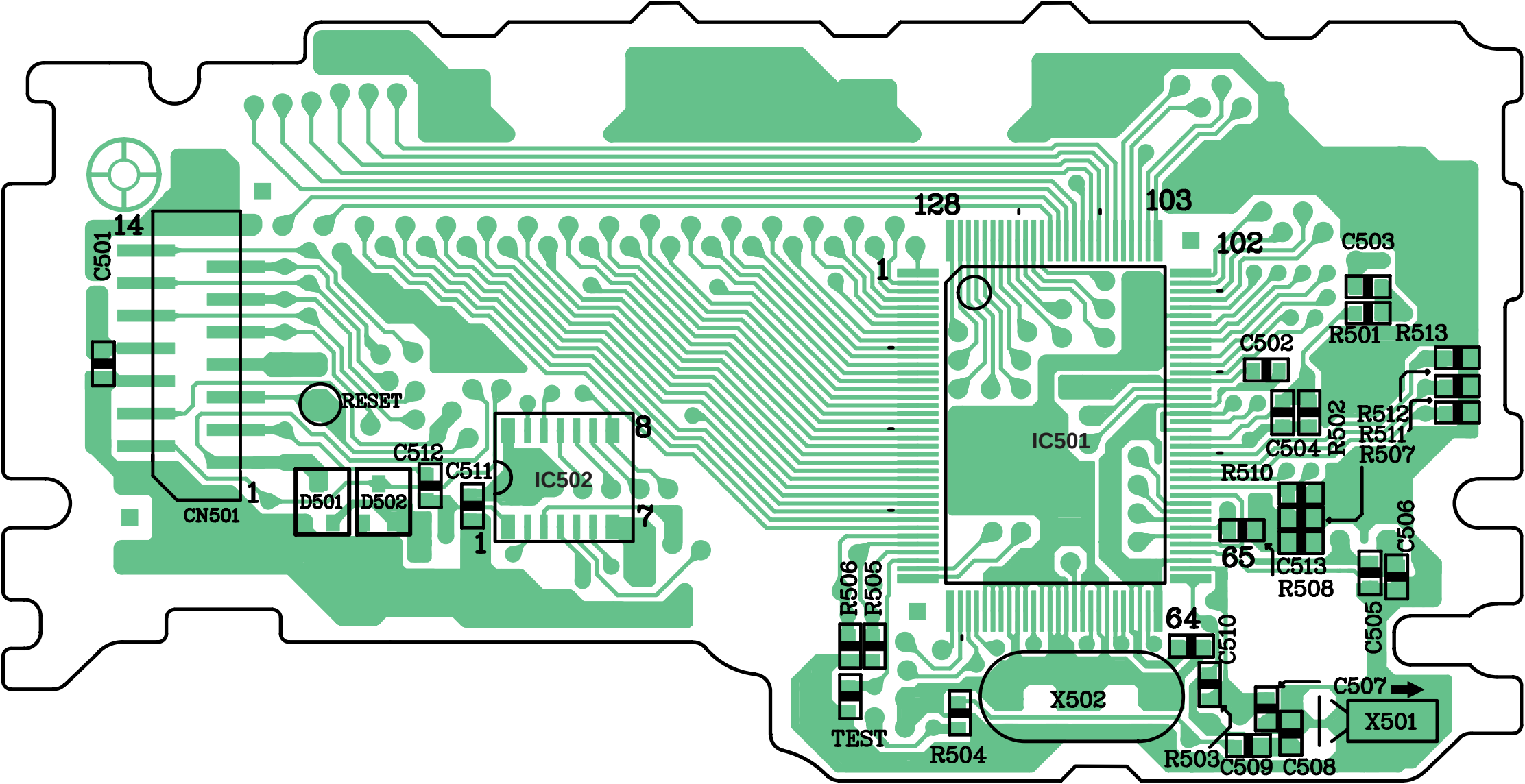
M(W) / KXTC1175BXB / KXTC1175BXN / Printed in Japan

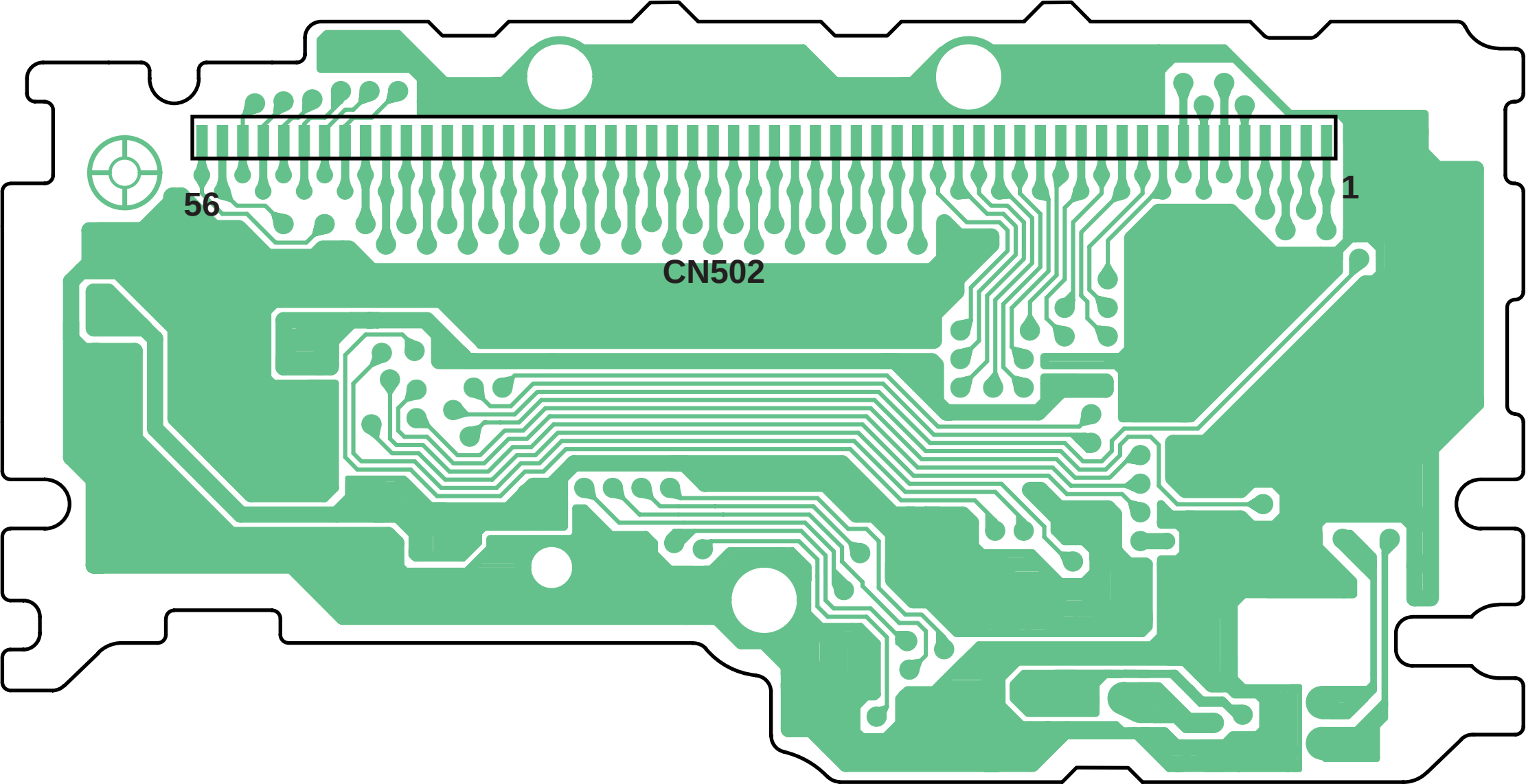

CN1
DC+
1
DC-
2
R1
1.5
D1
CHRG.P
+
CHRG.M
-
R2
100
Q1
680
R3
LED1
L1
27

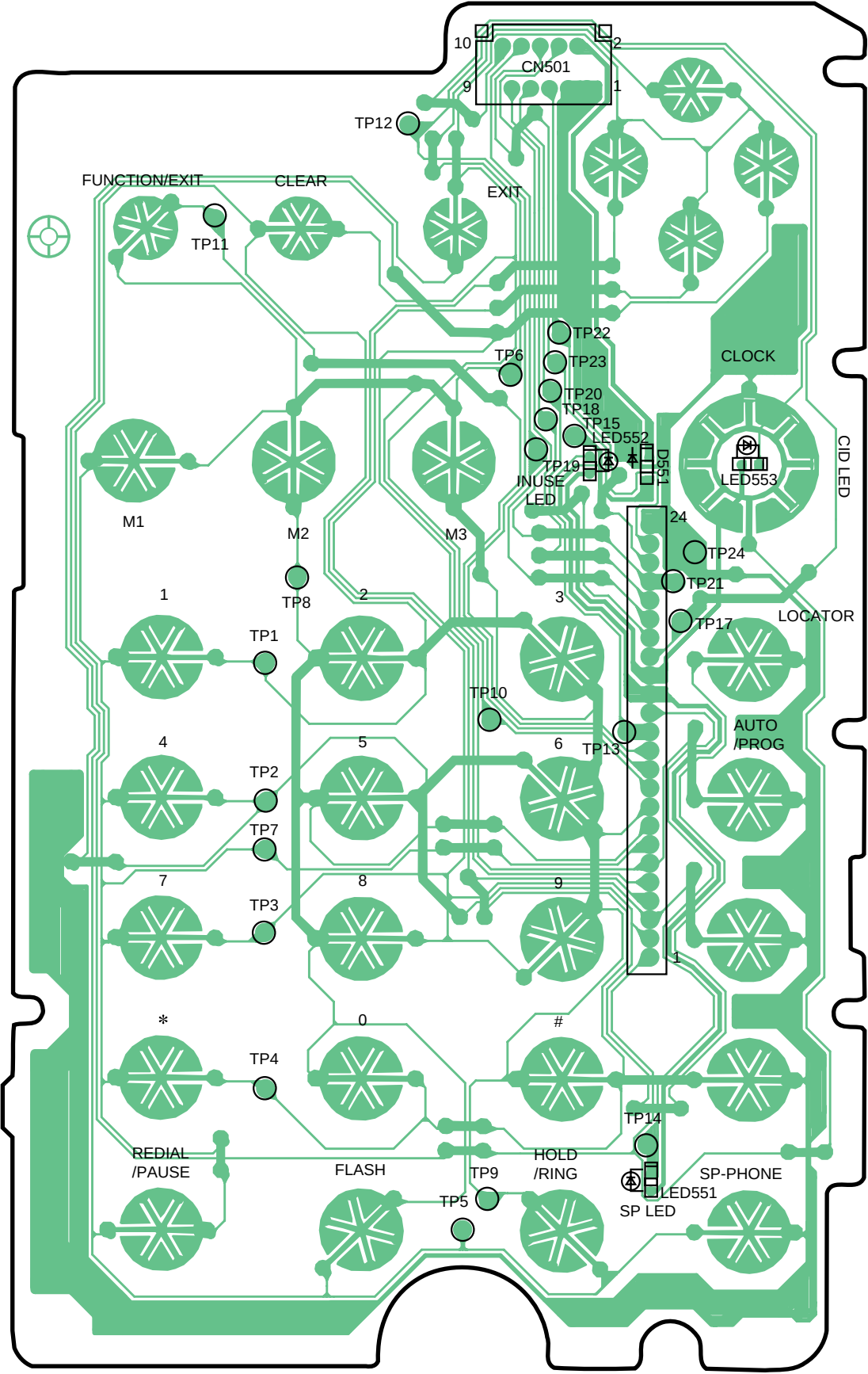

TX
RX
IC901
IC902
TEST_POINT
J901
NC
DC VOLTAGE
PIN V PIN V PIN V PIN V
1 3.2 17 0 33 0 49 3.4
2 0 18 3.2 34 0 50 3.4
3 3.2 19 3.4 35 3.4 51 3.4
4 3.2 20 3.4 36 0 52 0
5 3.2 21 3.2 37 0 53 0
6 3.4 22 3.4 38 0 54 0
7 3.4 23 0 39 0 55 0
8 1.8 24 3.4 40 0 56 0
9 0.6 25 0 41 0 57 2.2
10 0 26 0 42 0 58 2.2
11 0 27 1.4 43 0 59 2.2
12 1.6 28 3.2 44 0 60 2.2
13 0 29 3.2 45 0 61 0
14 0 30 3.2 46 0 62 3.2
15 0 31 0 47 0 63 3.2
16 0 32 0 48 0 64 3.2
DC VOLTAGE
PIN V
1 0
2 3.4
3 0
4 3.2
5 0
6 3.4
7 0
8 3.4
INPUT 1kHz
-40dBm
* "NC" is the part not used.

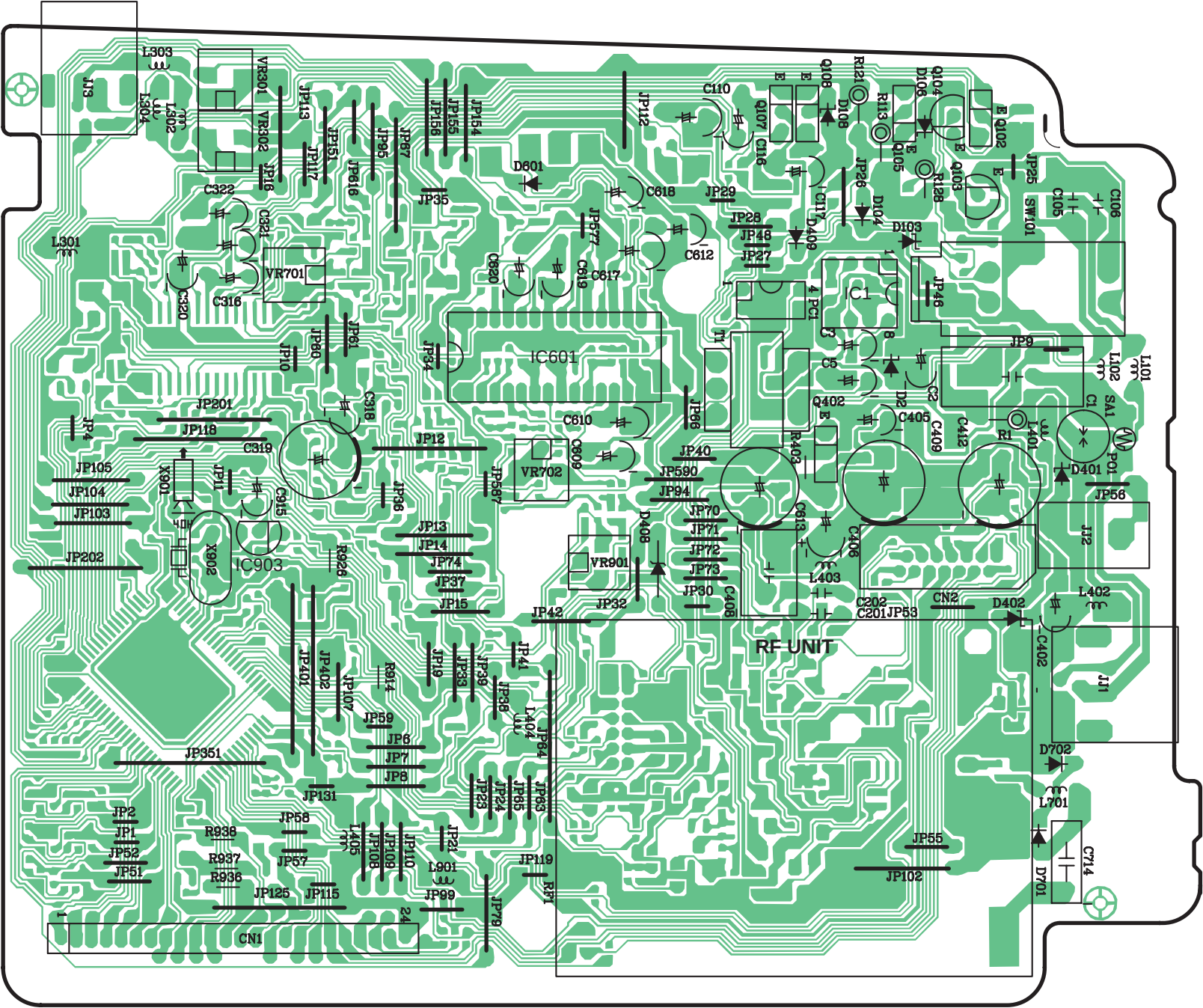


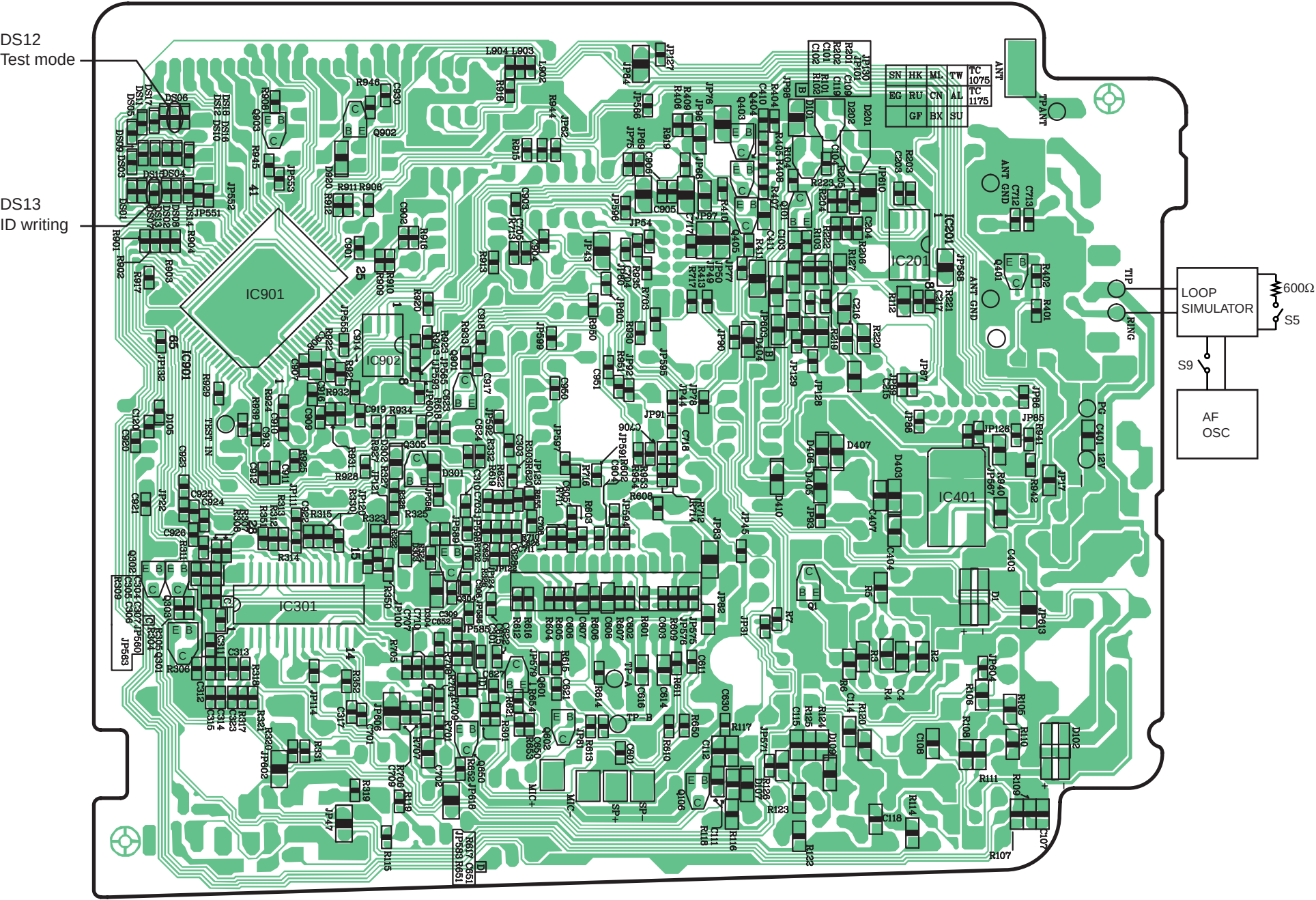
* "NC" is the part not used.

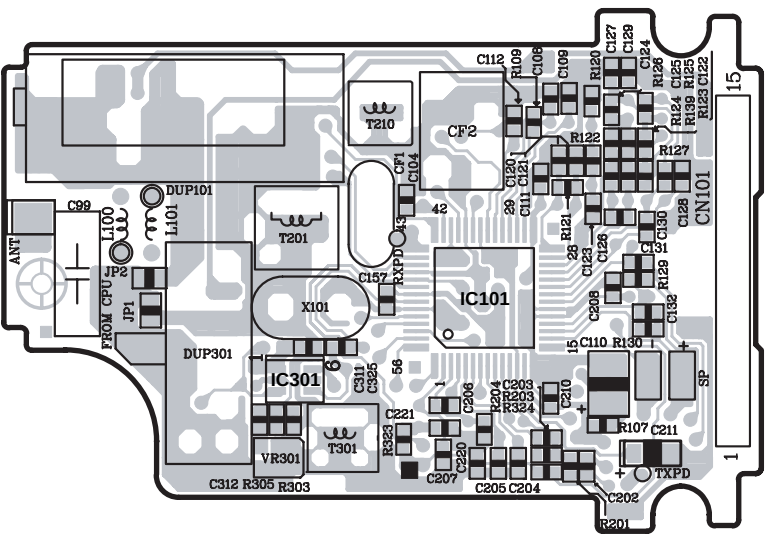

14
C501
CN501
1
RESET
D501
D502
C512
C511
1
IC502
8
7
128
1
103
102
IC501
C503
R501
R513
C502
C504
R502
R512
R511
R507
R510
65
C513
R508
C506
C505
64
C510
X502
C507
X501
R503
C509
C508
R506
R505
TEST
R504

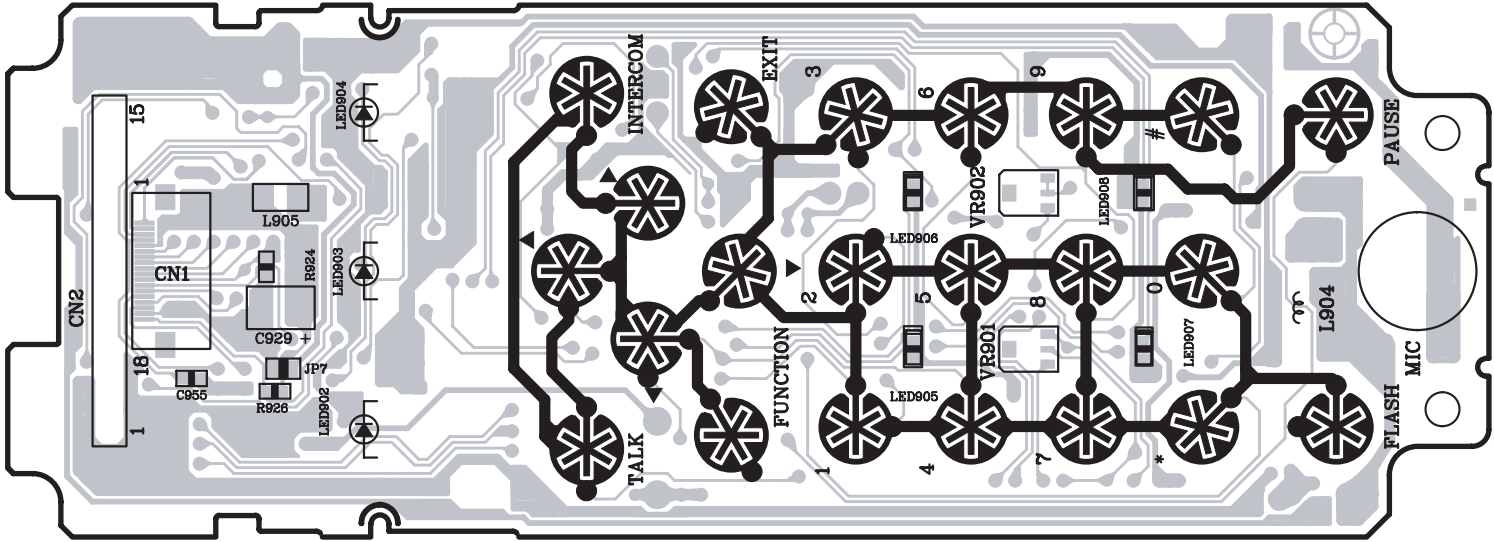

56
1
CN502

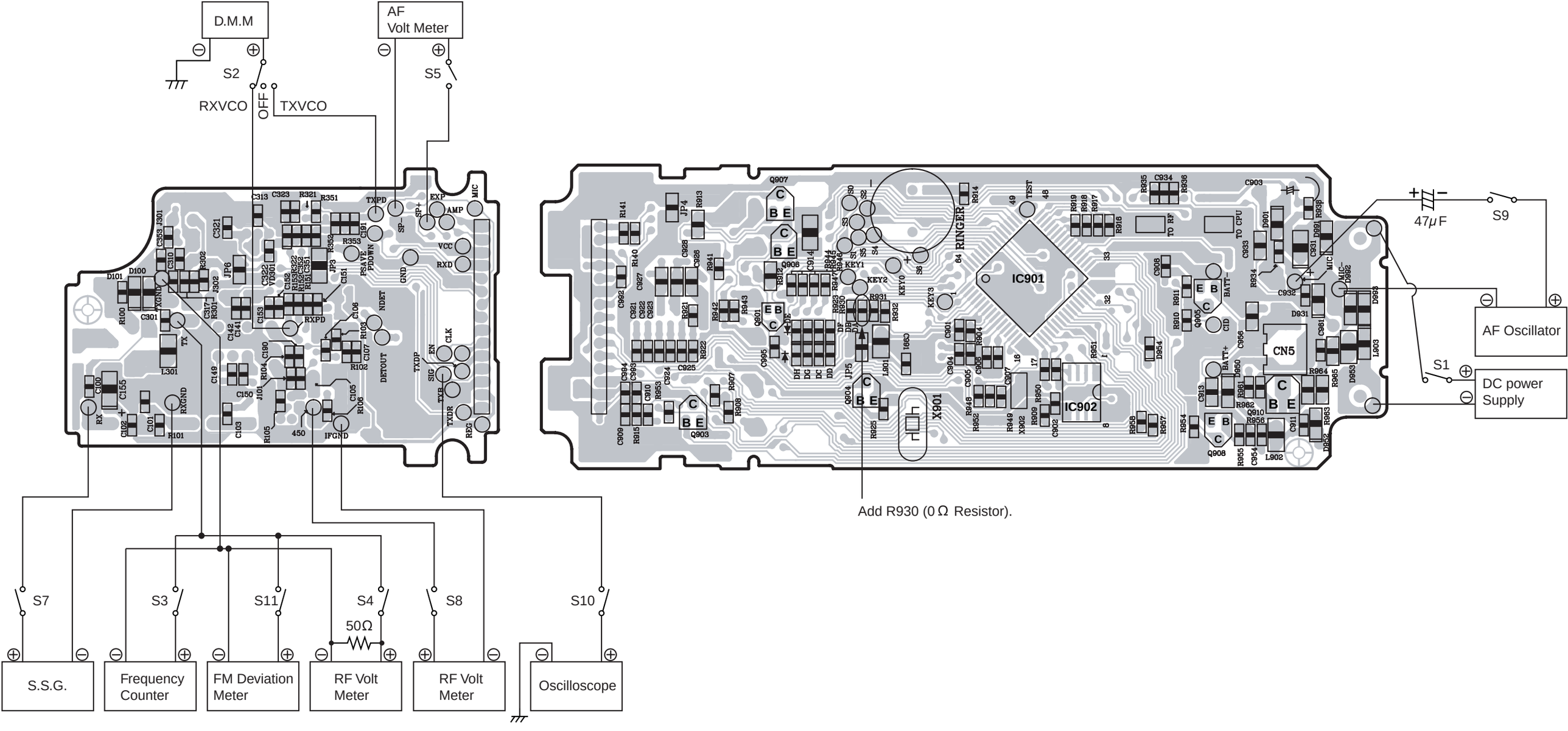

10
2
CN501
9
1
TP12
FUNCTION/EXIT
CLEAR
EXIT
TP11
TP22
TP6
TP23
CLOCK
TP20
TP18
TP15
LED552
D551
TP19
INUSE
LED
LED553
CID LED
M1
M2
M3
24
TP24
TP8
TP21
1
2
3
TP17
LOCATOR
TP1
TP10
AUTO
/PROG
4
5
6
TP13
TP2
TP7
7
8
9
TP3
1
*
0
#
TP4
TP14
REDIAL
/PAUSE
FLASH
TP9
HOLD
/RING
SP-PHONE
TP5
LED551
SP LED

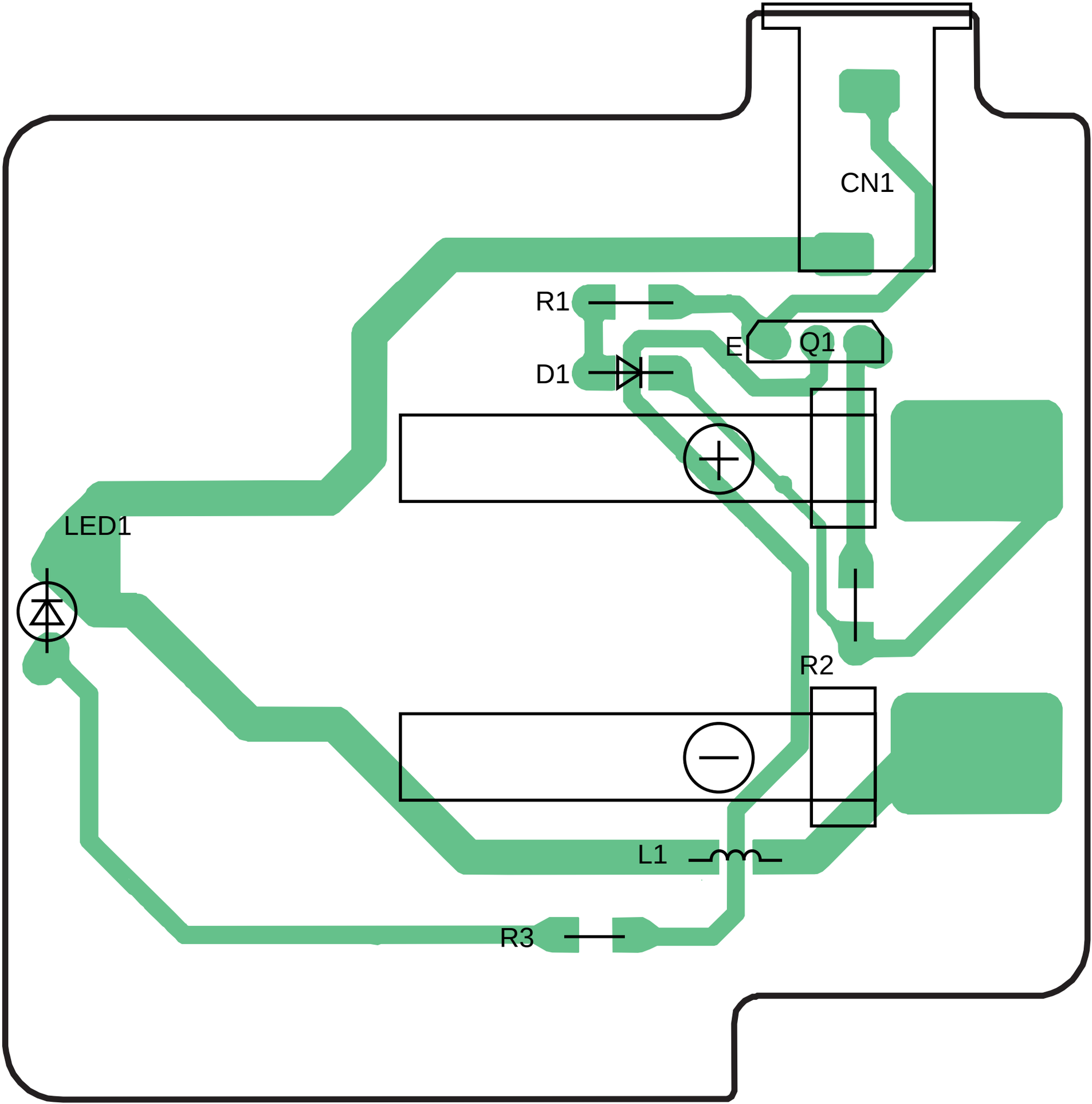

RF UNIT
IC601
IC903
IC1
CN1
CN2
L303
L304
L302
VR301
VR302
JP18
JP113
JP151
JP147
JP95
JP67
JP155
JP156
JP154
JP619
JP35
C322
C321
C320
C316
VR701
L301
JP69
JP91
JP10
JP34
JP201
JP118
JP4
JP105
JP104
JP103
JP202
C319
C318
X901
JP11
C315
X902
JP12
JP36
JP587
VR702
JP13
JP14
JP74
JP37
JP15
R936
JP401
JP402
JP107
R914
JP59
JP6
JP7
JP8
JP351
JP131
JP2
JP1
JP52
JP51
R938
R937
R936
JP58
JP57
JP125
JP115
L405
JP108
JP109
JP110
JP21
L901
JP99
JP119
RF1
JP79
24
1
D601
JP112
C618
JP577
C619
C620
C617
C612
C610
C609
JP590
JP94
JP40
JP42
JP32
VR901
D408
JP70
JP71
JP72
JP73
JP30
C408
C613
JP41
JP19
JP33
JP39
JP38
L404
JP84
JP23
JP24
JP65
JP63
C110
Q107
C116
JP29
JP28
JP48
JP27
C117
D409
Q108
D108
R121
Q104
D106
R113
Q105
Q103
R123
JP26
D104
D103
JP46
JP25
SW101
C105
C106
Q102
JP9
C5
C2
D2
Q402
C405
C409
C412
R403
R1
L401
C1
L101
L102
SA1
PO1
D401
JP56
JJ2
JJ1
C408
L403
C202
C201
JP53
CN2
D402
L402
C402
D702
L701
D701
C714
JP55
JP102

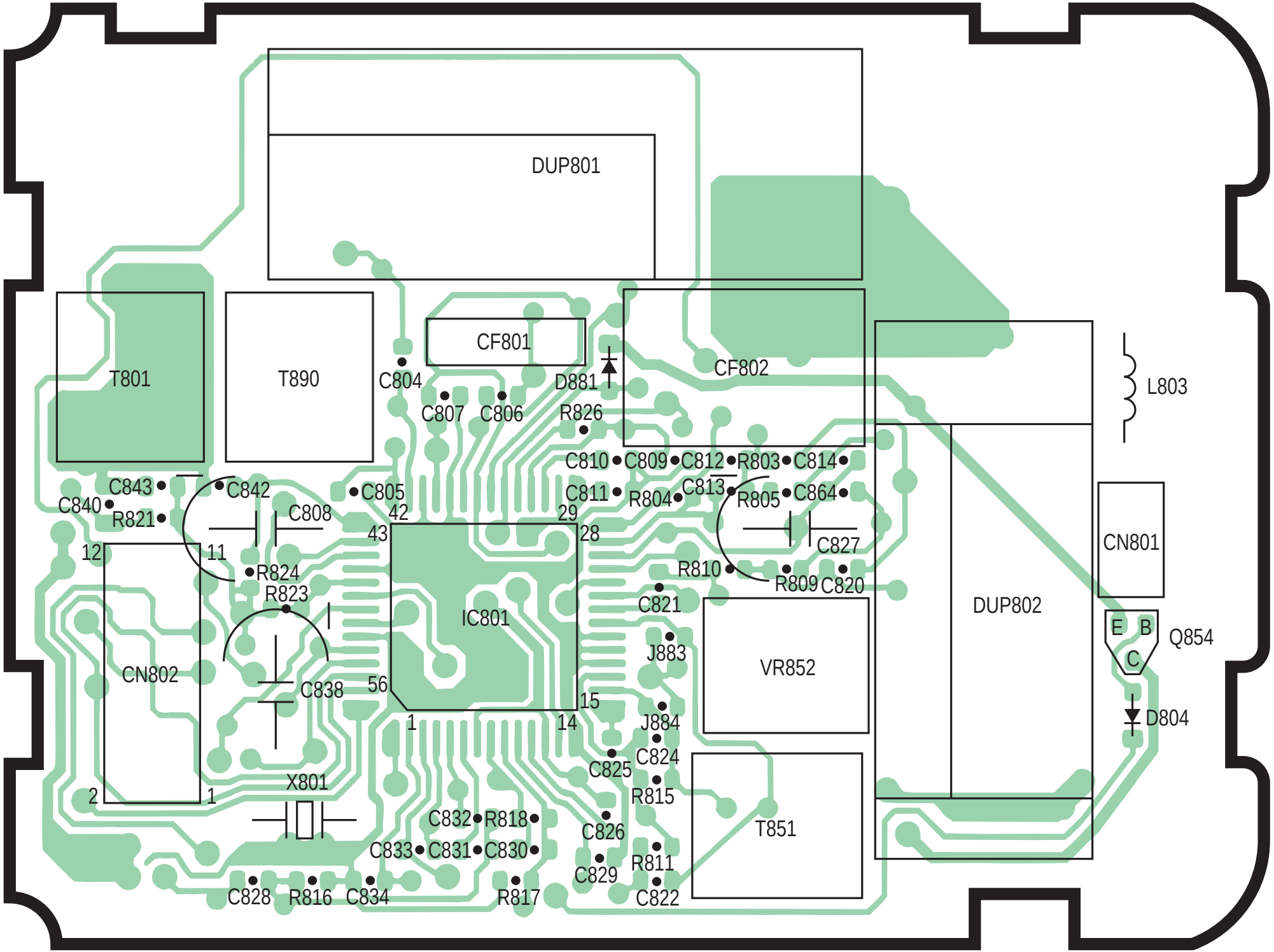

DS12
Test mode
DS13
ID writing
IC901
IC902
IC201
IC401
IC301
SN HK ML TW TC 1075
EG RU CN AL TC 1175
GF BX SU
LOOP SIMULATOR
600Ω
S5
S9
AF OSC
TIP
RING

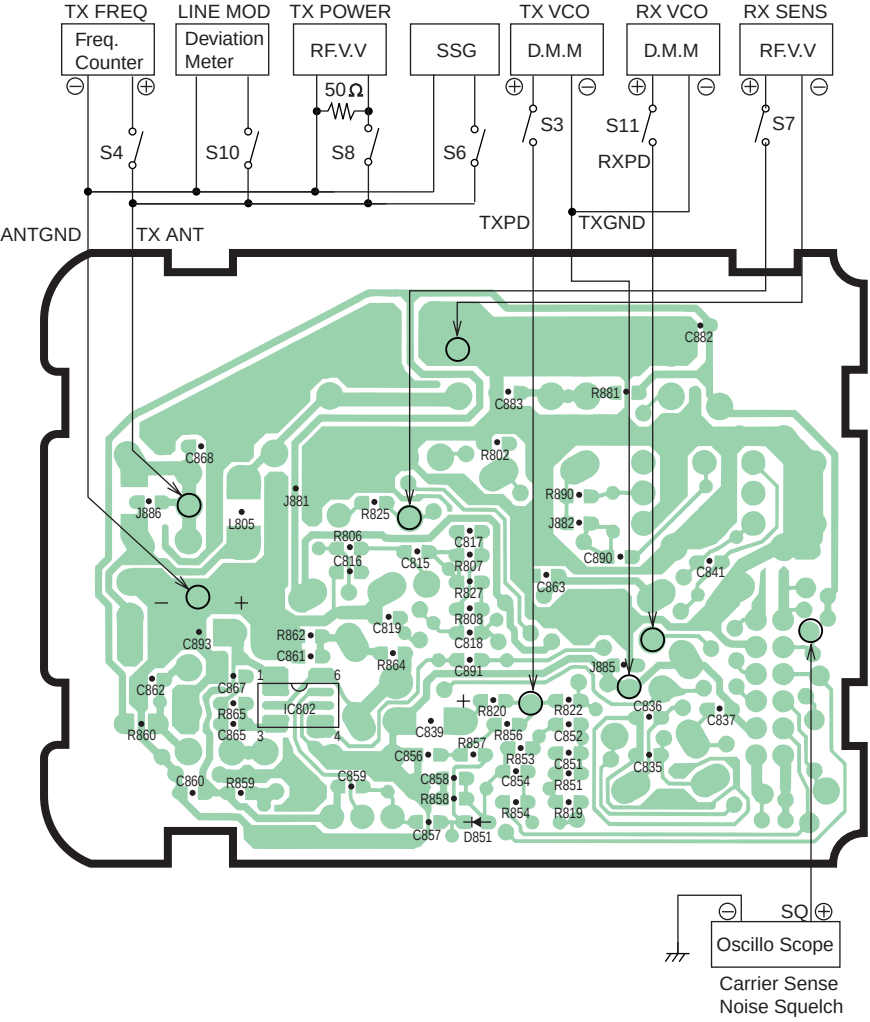

ANT
C99
L100
L101
DUP101
FROM CPU
P2
JP1
T201
T210
CF2
CF1
C104
RXPD
C157
X101
IC101
DUP301
IC301
C311
C325
VR301
T301
C312
R305
R303
C112
R109
C108
C109
R120
C127
C129
C124
R126
C125
R124
R139
R125
R123
C122
R122
R127
C120
C121
C111
C130
C131
C128
C123
R121
C208
C132
R129
C110
R130
SP
C221
R323
C206
R204
R203
R324
C203
C210
C207
C220
C205
C204
R107
C211
TXPD
C202
R201
CN101
15
1

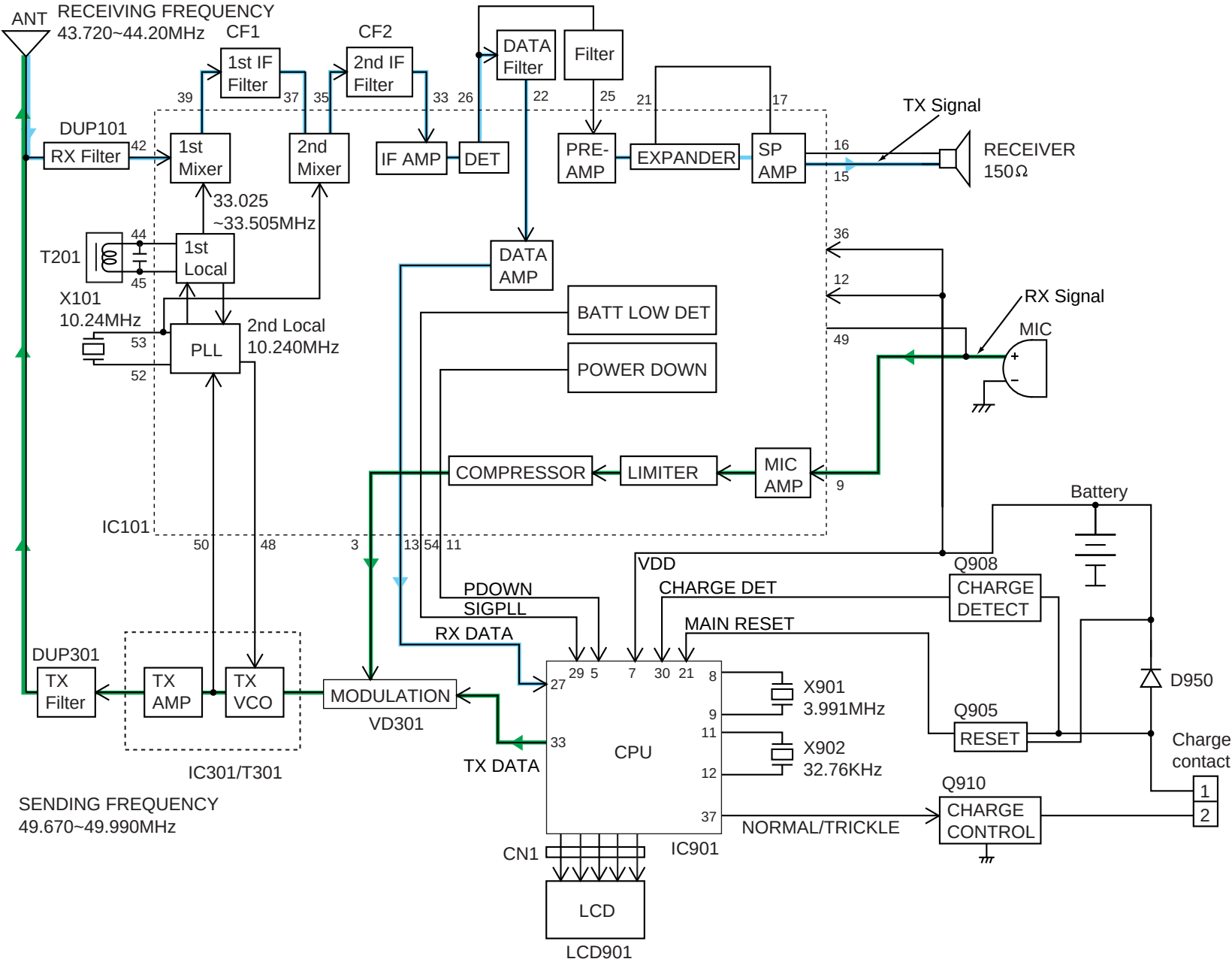

CN2
15
1
18
1
CN1
LED904
L905
LED903
R924
C929
JP7
C955
R926
LED902
INTERCOM
EXIT
TALK
FUNCTION
VR902
VR901
LED906
LED905
LED908
LED907
L904
PAUSE
FLASH
MIC
3
6
9
#
2
5
8
0
1
4
7
*

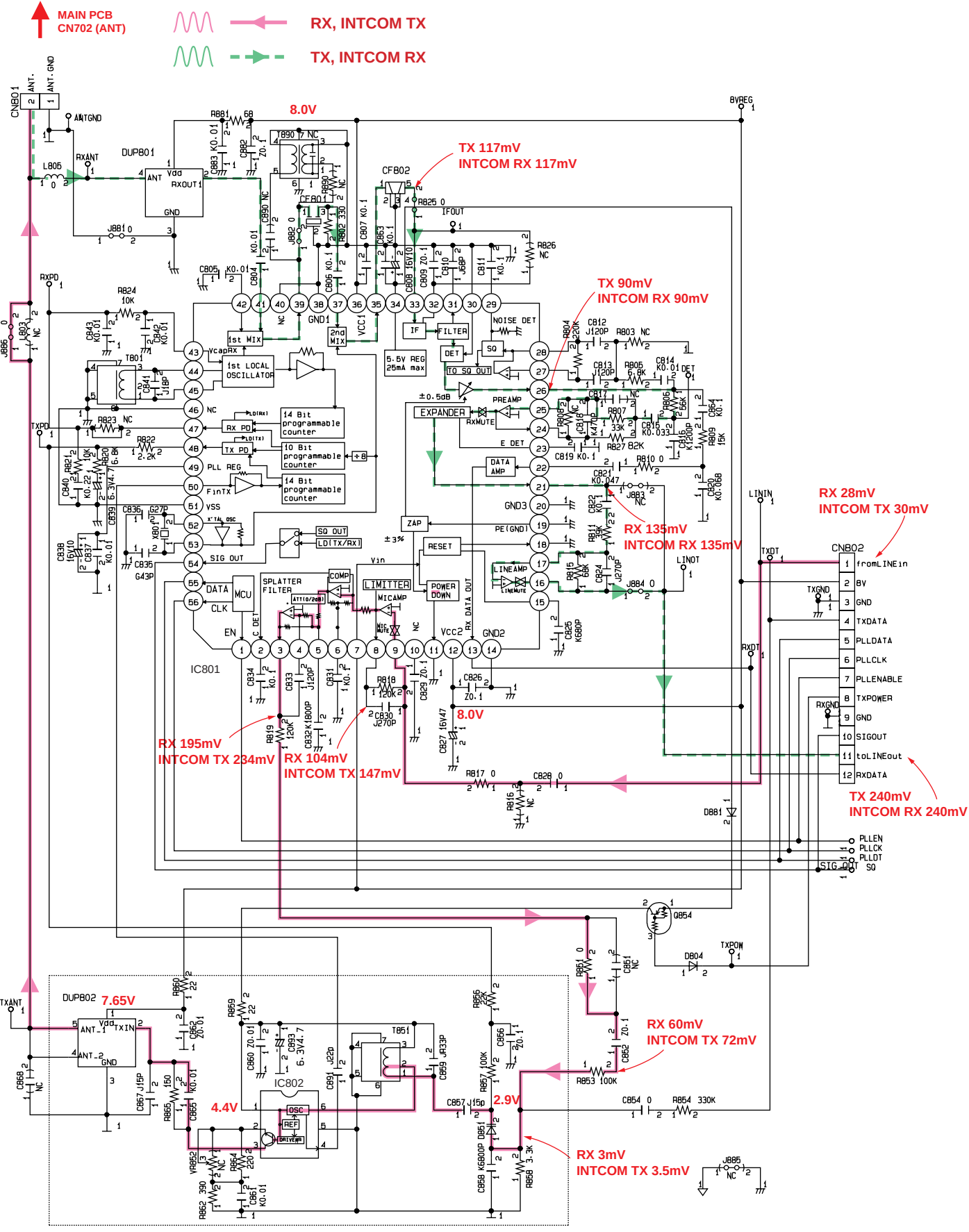

D.M.M
AF
Volt Meter
S2
S5
RXVCO
OFF
TXVCO
IC901
IC902
X901
CN5
RINGER
47μF
S9
S1
AF Oscillator
DC power
Supply
Add R930 (0Ω Resistor).
S7
S3
S11
S4
S8
S10
50Ω
S.S.G.
Frequency
Counter
FM Deviation
Meter
RF Volt
Meter
RF Volt
Meter
Oscilloscope

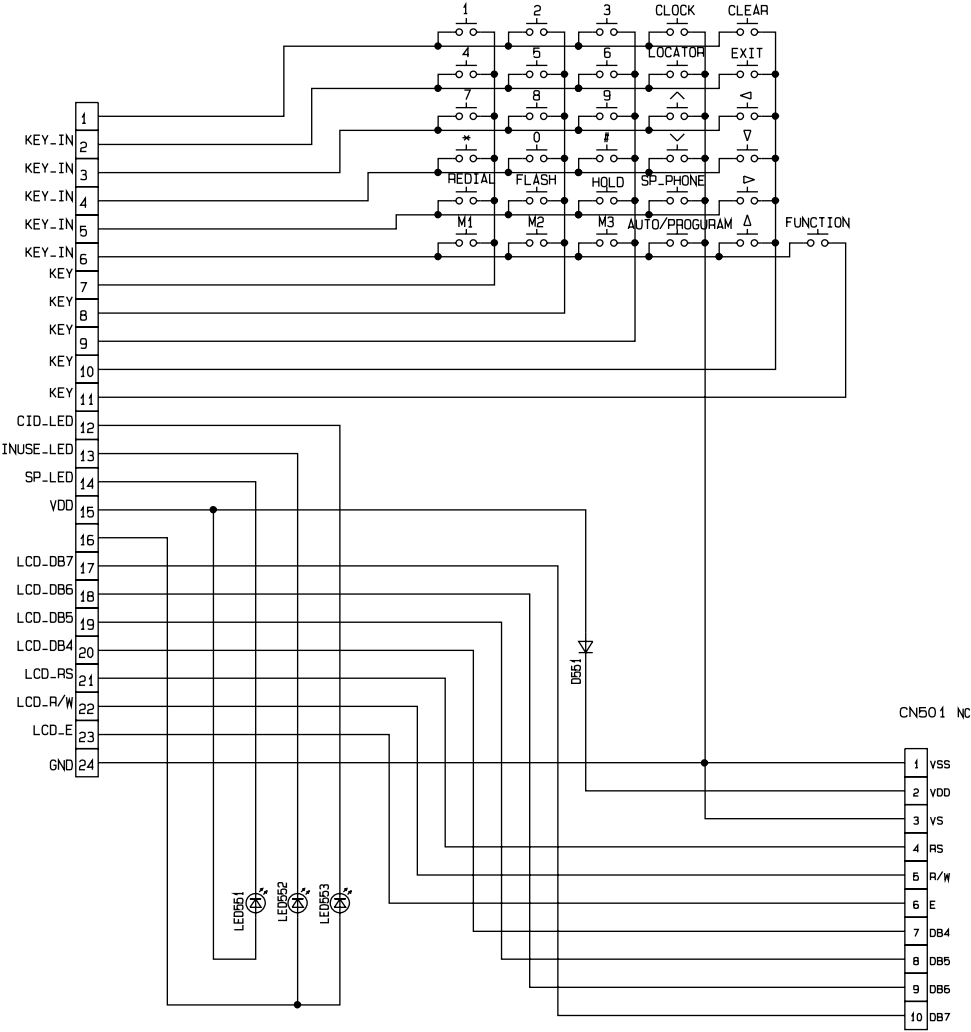

CN1
R1
E
Q1
D1
LED1
R2
L1
R3


DUP801
T801
T890
CF801
C804
C807
C806
D881
R826
CF802
L803
C810
C809
C812
R803
C814
C811
R804
C813
R805
C864
C827
C805
42
29
43
28
IC801
1
56
15
14
C843
C840
R821
C842
C808
12
11
R824
R823
CN802
C838
X801
2
1
C832
R818
C833
C831
C830
C828
R816
C834
R817
C821
J883
J884
C824
C825
R815
C826
R811
C829
C822
VR852
T851
R810
R809
C820
DUP802
CN801
E
B
C
Q854
D804


TX FREQ
Freq. Counter
LINE MOD
Deviation Meter
TX POWER
RF.V.V
SSG
TX VCO
D.M.M
RX VCO
D.M.M
RX SENS
RF.V.V
50Ω
S4
S10
S8
S6
S3
S11
RXPD
S7
ANTGND
TX ANT
TXPD
TXGND
C882
C883
R881
C868
R802
J886
L805
J881
R825
R890
J882
R806
C816
C815
C817
R807
R827
C890
C841
C863
R808
C818
C819
C893
R862
C861
R864
C891
J885
C862
C867
R865
C865
IC802
R820
R822
C836
C837
R860
C839
R857
R856
C852
C856
R853
C851
C835
C860
R859
C859
C858
R854
R851
R858
R854
R819
C857
D851
SQ
Oscillo Scope
Carrier Sense
Noise Squelch


ANT
RECEIVING FREQUENCY
43.720~44.20MHz
CF1
CF2
1st IF Filter
2nd IF Filter
DATA Filter
Filter
39
37
35
33
26
22
25
21
17
TX Signal
DUP101
RX Filter
42
1st Mixer
2nd Mixer
IF AMP
DET
PRE-AMP
EXPANDER
SP AMP
16
15
RECEIVER
150Ω
33.025
~33.505MHz
T201
44
45
1st Local
DATA AMP
36
12
X101
10.24MHz
53
52
PLL
2nd Local
10.240MHz
BATT LOW DET
POWER DOWN
RX Signal
MIC
49
COMPRESSOR
LIMITER
MIC AMP
9
Battery
IC101
50
48
3
13
54
11
VDD
Q908
CHARGE DETECT
PDOWN
SIGPLL
CHARGE DET
RX DATA
MAIN RESET
DUP301
TX Filter
TX AMP
TX VCO
MODULATION
VD301
27
29
5
7
30
21
8
9
11
12
33
37
CPU
X901
3.991MHz
X902
32.76KHz
Q905
RESET
D950
Charge contact
1
2
TX DATA
Q910
CHARGE CONTROL
NORMAL/TRICKLE
IC301/T301
SENDING FREQUENCY
49.670~49.990MHz
CN1
IC901
LCD
LCD901


MAIN PCB
CN702 (ANT)
RX, INTCOM TX
TX, INTCOM RX
8.0V
TX 117mV
INTCOM RX 117mV
TX 90mV
INTCOM RX 90mV
RX 28mV
INTCOM TX 30mV
RX 135mV
INTCOM RX 135mV
RX 195mV
INTCOM TX 284mV
RX 104mV
INTCOM TX 147mV
8.0V
TX 240mV
INTCOM RX 240mV
RX 60mV
INTCOM TX 72mV
RX 3mV
INTCOM TX 3.5mV
7.65V
4.4V
2.9V
IC801
IC802
DUP801
DUP802
CFB01
CFB02
CNB01
CNB02
Q854
D804
D881
D851
J885
fromLINEin
BV
GND
TXDATA
PLLDATA
PLLCLK
PLLENABLE
TXPOWER
GND
SIGOUT
toLINEout
RXDATA
PLLEN
PLLCK
PLLDT
SIG OUT
SQ
* "NC" is the part not used.


1
2
3
CLOCK
CLEAR
4
5
6
LOCATOR
EXIT
7
8
9
*
0
#
REDIAL
FLASH
HOLD
SP_PHONE
M1
M2
M3
AUTO/PROGURAM
FUNCTION
KEY_IN
KEY_IN
KEY_IN
KEY_IN
KEY_IN
KEY
KEY
KEY
KEY
KEY
CID_LED
INUSE_LED
SP_LED
VDD
LCD_DB7
LCD_DB6
LCD_DB5
LCD_DB4
LCD_RS
LCD_R/W
LCD_E
GND
LED551
LED552
LED553
D551
CN501 NC
VSS
VDD
VS
RS
R/W
E
DB4
DB5
DB6
DB7

TX

RX

SP PHONE TX

SP PHONE RX

INTCOM TX

INTCOM RX

RX IC301 pin 6 46mV
pin 8 130mV (Vol: Max)
pin 9 125mV

IC301 pin 3 TX (HANDSET) 220mV
pin 3 TX 510mV
pin 3 SP PHONE TX 310mV

SP PHONE TX (pin 28) 60mV
SP PHONE TX (pin 27) 61.5mV

(HANDSET)
-40dBm/600W

RX 46mV
(HANDSET)
(Vol: Max)

TX (pin 24) 145mV

4.4V

-25dBm/600W

8.0V

TX (HANDSET) 155mV
SP PHONE TX 390mV
TX 230mV

From RF BLOCK
(CN801)

RX 120mV

RX 28mV
INTCOM TX 30mV

8.0V

TX 240mV
INTCOM RX 240mV

5.0V

5.6V

8.0V

5.5V

(Vol: Max)	SP PHONE RX	(Vol: Max) INTCOM RX
IC601 pin 27	21mV	5.5mV
pin 26	38mV	9.5mV
pin 19	20mV	5.0mV
pin 15	1000mV	250mV

SP PHONE RX
95mV

SP PHONE RX
31mV

5.4V

4.9V IC902

4.9V

4.9V

INTCOM RX 240mV
(Vol: Max)

SP PHONE RX 980mV
(Vol: Max)

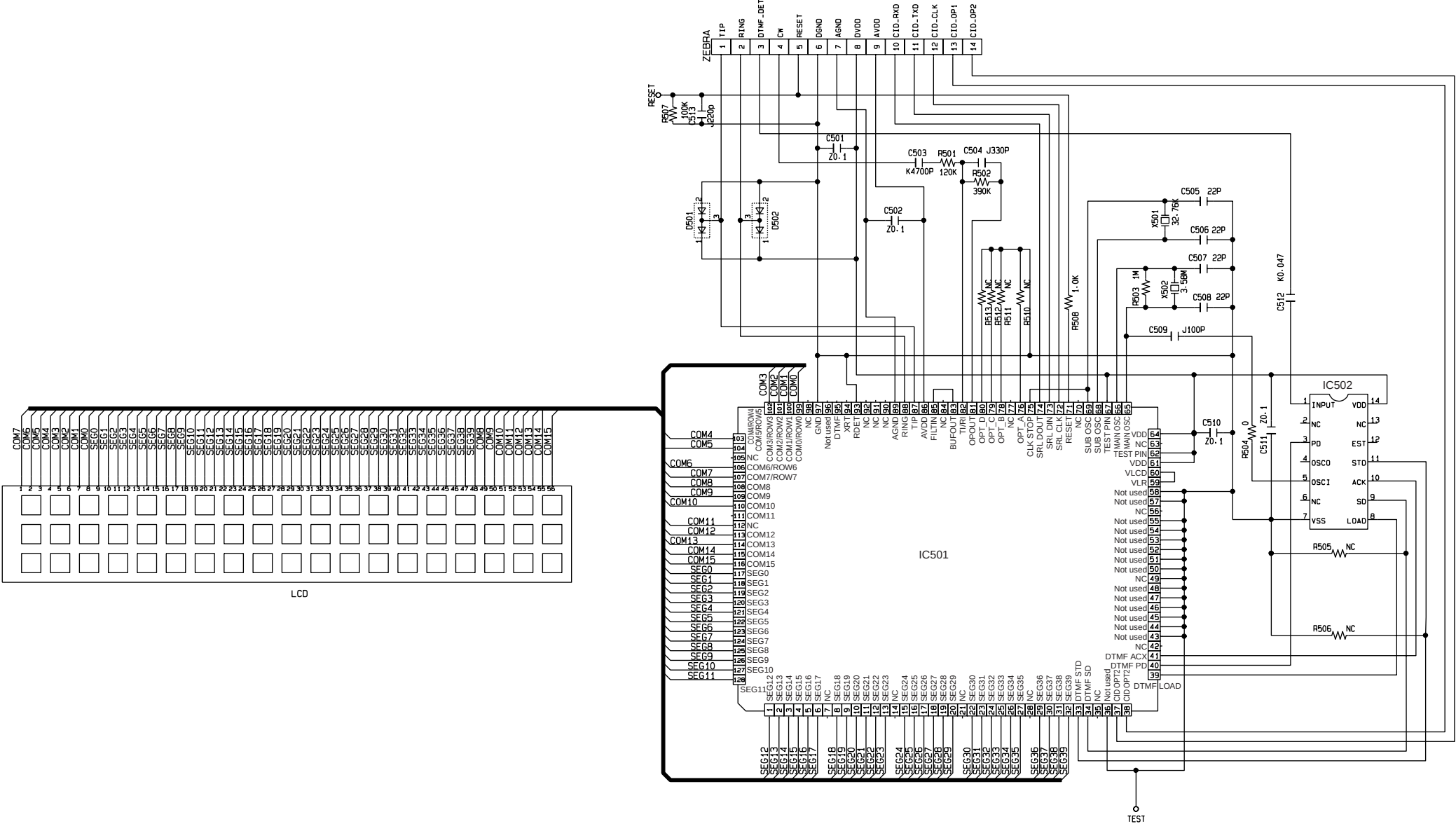
-51dBm/600W
(SP PHONE/INTCOM)

SP PHONE/INTCOM TX
IC601 pin 9 3.3mV
pin 10 150mV
pin 3 115mV
pin 4 280mV

NC CN902
1 TIP
2 RING
3 DTMF
4 CW

CN901
1 LCD_RW/CID_RXD
2 LCD_E/CID_TXD
3 LCD_RS/CID_CLK
4 LCD_DB4/CID_OP1
5 LCD_DB5/CID_OP2
6 LCD_DB6
7 LCD_DB7
8 CID_LED
9 INUSE_LED
10 SP_LED
11 SIGOUT
12 TEST_IN
13 TONE_DET
14 SP_MUTE

* "NC" is the part not used.


ZEBRA
1 TIP
2 RING
3 DTMF_DET
4 CW
5 RESET
6 DGND
7 AGND
8 DVDD
9 AVDD
10 CID_RXD
11 CID_TXD
12 CID_CLK
13 CID_OP1
14 CID_OP2
RESET
R507 100K
C513 J220P
C501 Z0.1
C503 K4700P
R501 120K
C504 J330P
R502 390K
C502 Z0.1
D501
D502
C505 22P
X501 32.76K
C506 22P
C507 22P
X502 3.58M
C508 22P
R503 1M
C509 J100P
R508 1.0K
R513 NC
R512 NC
R511 NC
R510 NC
C512 K0.047
IC502
INPUT
NC
PD
OSCO
OSCI
NC
VSS
VDD
NC
EST
STD
ACK
SD
LOAD
C510 Z0.1
R504 0
C511 Z0.1
R505 NC
R506 NC
IC501
LCD
TEST